

Break

Judge's choice

Amid the future caused by Hugh... the rejection of his £7,500 Arts Council Award for an Unfinished History of the World, the smaller ripples caused by the choice of Colin Davis's *The Animals in the Garden* (Heinemann) as the winner in the children's book category have gone virtually unnoted. Yet another £7,500 of public money has been awarded for a novel not highly thought of among children's book critics and selected by Sir John Betjeman, presumably on the strength of his having written one children's book, *Archie and the Street* (Oxford), literature director of the Arts Council, claims that Sir John was their first choice to judge this category being "someone known to be interested in children's books and a distinguished writer." He does not say why there was only one judge in each section. "Because," says Mr Osborne, "we felt committee decisions are usually the wrong ones." Perhaps the Arts Council's decision in this case, made by about 20 people, bears this out.

Each of the judges—the others were Kingsley Amis for fiction and Dame Veronica Wedgwood for biography or history—received £2,000 for their pains. Yet, with all this Arts Council money slopping around, the judges' reports are not automatically available to the public who pay for them. A newspaper, wishing to publish one of the essays, is required to pay a fee. Public money, it seems, can be spent at the behest of three generously rewarded individuals, without any right for their decisions to be open to public scrutiny. The *Animals in the Garden*, described by Mrs. Hoffmann, who reviewed it for the *TES*, as "a well-written and attractive book, chosen in preference to such others as Alan Garner's acclaimed *Stone Book* (Collins/Poindexter) and Faith Jacques' charming picture book *My Little House* (Heinemann). Sir John Betjeman, who said that the winner "looks like a book, even when the dust-ripper is off... it is good reading and the

illustrations, all in black and white, leave room for the imagination. They are secondary to the text. The theme is an engaging and touching one—a theme somewhat reminiscent of that monumental bestseller *Watership Down*, which goes some way to explain the publicity accorded this book by its publishers, though they turned it down initially some years ago.

The pity is it is that there will be no children's book category next year, and perhaps only every three years or so thereafter. What an opportunity lost.

Ready for battle



Dr. Alan Russell: Don't be kind to bureaucrats.

Next month he takes up the post of Director of the Inter-University Council, the body which has been channeling the resources of British universities into the development of Commonwealth universities. But an enormous question mark hangs over the future of the council. The recent quango-busting White Paper gave it short shrift. It had been set up to help in the creation of new universities in overseas Commonwealth countries, the report said. This task was largely completed, and the IUC's

main general role as an administrator of educational aid was duplicated, in a large degree, by the work of the British Council.

So the IUC is to be drawn into the British Council's "Tide" (figures, some say, are now going on between the British Council, the IUC, and the Overseas Development Administration which funds it, about it and how any autonomy can be maintained).

Naturally the IUC is extremely unhappy about all this. It says it was not created with the sole, and obviously short-term, aim of helping emergent countries set up their own higher education institutions, but to encourage continuing international academic collaboration.

It is also of pains to point out that although it is almost entirely government funded, it is nevertheless a private company set up by the British universities. Its work—recruitment, staff development, fellowships, grants and academic links—is based on voluntary collaboration within the academic community, and as such quite different in emphasis and mood from any similar work done by the official government cultural agency.

These differences, however, can escape casual outside observers who tend to see in the British educational aid programme an alarming degree of muddle, duplication and internal disagreement, all overlaid by a continuing succession of reviews and reports.

Into this difficult situation steps Dr. Russell, replacing the IUC's retiring director, Mr. Richard Griffiths. He comes fresh from a European job, presenting Community policies in international arenas, and as such is probably as well equipped as anyone could be for the bureaucratic wrangles that lie ahead.

For one thing, he says, he is quite used to notions of rationalizing and economizing, and can see there is a lot to be done in the IUC. He says the IUC has to yield something in terms of policy independence, it might gain from greater rationalization. However, he feels that, ideally, the time to have sorted out the IUC would have been done or four years ago when questions about its future were first being raised.

Nevertheless, he is challenged by the purely practical job of interpreting the mandates of the council in the light of current thinking. When asked about his plans he says he would like to build links with analogous institutions in other countries, but then says that although that might sound good, it doesn't really mean a great deal.

For a bureaucrat he is unusually objective, even towards his own kind. "You mustn't be kind to bureaucrats," he says. "It just means they sit back and do nothing." He also has an unerring habit of turning questions back on the questioner.

Those joining battle with him over the future of the IUC can expect to have a tough time, while an obvious healthy scepticism makes it unlikely that the new director will be taking up his post without having thought about exit routes, should he no longer have a council in hand.



Probably because of the government health warnings.

Rising stars

There was more than a touch of paternal pride in the introduction by Alec Ross (now a Vice-Chancellor) to Neville Bennett's inaugural lecture at Leicester last week. Ross started education at Leicester in 1967 and Bennett was one of the first students to take the Leicester BEd. He then went to the University of Department of Educational Research as a research adviser before becoming a lecturer in the same department. In due course when Noel Entwistle moved to Edinburgh, Bennett (then of Teaching Styles and Pupils Progress) got the vocational chair. Leicester has certainly made its mark in education and part of its success is surely due to its knack of appointing rising stars to senior posts. The present head of department, Gareth Williams has

added an unusual planning session to the department. When Bennett returns to his post in the United Kingdom, he will serve his time as head of department. We lost to the even more controversial *Lecturing Styles and Progress*, assuming that it does allow access to the and tutorial as readily as teachers did to their lessons.

Time is money

Students prepared to burn the night oil are likely to see new virtue in the eyes of administrators, whatever teachers think. Imperial College has just cut out why its electricity bill by nearly £5,000 last month. It opened because a student came in the middle of the day for an experiment which involved running 100 hp motors for half an hour.

The actual amount of consumed was not very few pounds' worth of domestic rates. But like many institutions which use a lot of electricity, Imperial College is charged a special tariff under which cost per unit depends on the amount of electricity used in the evening the cost would be very high. Every bit of electricity used in the evening is charged at a special peak time.

The consultants who have been advising Imperial on how to fuel bills point out that if wood is to be believed, great fuel breakthroughs always come in the small hours.

Next week

Monday's children: extracts from the winning entries in the competition. Biddy Farnsworth on the Arts Centre for Education. Education since Robbins: a review of three new books. The Prerequisite of Harlow. Arts: Norman Shaw's week's television. Charles Farnsworth's week's television.

THE TIMES Educational Supplement

FRIDAY MAY 9 1980 NUMBER 3335

FIRST PUBLISHED 1910 PRICE 25p

Marlborough First & Middle School

Headmaster: Mrs. S. P. Chubb
Careless: Mr. A. A. Robinson
London Borough of Harrow



Tim Francis, who won The TES "Monday's children" competition. Extracts from the winning entries pages 20 and 21

Free schooling system in growing danger

Free education, the fine principle enshrined in the 1944 Education Act, is now sounding increasingly hollow. Growing numbers of parents and children are being asked to pay for schooling. Pending cuts take their toll on

text books, paper and equipment. Bingo evenings raise cash for sports equipment, girls go modelling to pay for books and parents clean, paint and repair their children's schools. Philip Venning reports on the cash crisis.

Scandal as parents foot bills for books

The free education service is beginning to break down. Parents throughout the country are being forced to pump thousands of pounds into schools to pay for basic text books and equipment that used to be provided free. Local authorities are no longer equipped to maintain educational standards.

In some areas, spending cuts have forced head teachers to devote more and more of their time to fund-raising to pay for essential teaching aids and services. And, in extreme cases, parents have offered to pay the salaries of extra teachers. The increasing injection of personal money into the public service may be illegal. The 1944 Act says local authorities must not charge any fees "in respect of the education provided" in any school or college. The uncertainty arises because the money is treated as donations.

Even pupils at primary schools are being asked to pay. Contributions of 2p a week are sought from children in a Nottinghamshire junior school so that classroom libraries can have a dictionary. And now Conservative MP for North Cornwall, Mr. Gerry Nowell, has introduced a Bill into the Commons which aims to clear up the legal uncertainty and allow local authorities to accept voluntary financial aid and voluntary services.

Education Act is rolled out for the summer

From Monday of this week, all governors and managers of schools become simply governors. In addition, local education authorities lose their right to provide nursery education—although they will now need the Secretary of State's approval if they want to close popular nursery schools—and the school standards order lost its force as a weapon in parents' fight for the school of their choice.

These are among the first changes to be introduced by the new Education Act. A circular sent out this week to all local authorities from the Department of Education and Science sets out the dates on which its various provisions start to operate. The changes allowing councils to charge for school meals and milk are already in force; they took effect on April 14. The Education Act was rushed through the House of Commons in a matter of days, and it is not yet clear whether the Department of Education will not keep information about the 11-plus examination or other arrangements used by local

authorities to select children. But he did know that admission to secondary schools to pupils of 11 years should be based on selection according to ability. They are listed below.

Mrs. Benn claimed in *Where*, the educational magazine, that probably only a third of the country's secondary population goes to a true comprehensive school. She says the government figures ignore direct grant or independent schools. When they are added to the calculation the proportion of all secondary pupils to comprehensives drops to 71 per cent.

Official comprehensive claims ridiculed

By Sarah Bayliss
Scorn and doubt were poured on government figures this week which purported to show that most children are to comprehensive schools. The scorn came from Mrs. Caroline Bann, a leading comprehensive school campaigner. Doubt was raised by Dr. Rhodes Boyson, the junior education minister.

Mrs. Bann dismissed as false the official statistics which said 82 per cent of all pupils are in comprehensive schools. The real figure was less than 60 per cent, and this included pupils at schools which were comprehensive in name only, she said.

TES Literary competition

Competition No 2

Report by Charybdis

Ambrose Bierce was odd even by authorial standards of eccentricity. Born in 1842, he served with distinction in the American Civil War. Later, in San Francisco, he worked in a mine before gravitating into journalism, where the unflinching acerbity of his pen won him enormous West Coast celebrity. A visit to London in 1872 was a further triumph. Later, he was to try his hand at goldmining and, after ignominious failure, returned to journalism. He appeared in Mexico in 1913 in circumstances unrecorded in this day.

The hundreds of biting satirical sketches on the pages and paragraphs of his weekly *Devils Dictionary* appeared in the periodical *Wasp* between 1881 and 1886. He is otherwise remembered for a clutch of short stories, including the haunting *Light in the Dark*, *Bridge*, *Post*, *Final*, *Supper*—has been imitated by several later writers. A definitive life and assessment of this remarkable man would be exceedingly welcome.

Competition rules creditably to the challenge of anticipating his

misanthropic wit (the mask possibly for strong but strongly repressed feeling). Definitions did not have to be about masters educational, but the majority were. Such topics were, understandably enough, the ones that most competitors felt most strongly about.

The cynicism of some definitions would have had even Bierce goggling; but, however, cynicism is not enough; there has to be incisive wit as well. Thus, if T. Griffiths' definition of "Chemical Warfare" had read simply "Cosmetics," it would have won him a pound; as it is, the comparative heavy-handedness of the production and promotion of cosmetics for profit, used by women against men in the battle of the sexes, earns him only a commendation.

Some of the neatest entries were, alas, spotted as having already appeared in similar competitions elsewhere. I hope no other competitors have slipped through this net, but apologies to their true believers if they have. No need, incidentally, to write enclosing letters when submitting entries; while notes pleading for explanation or mock-modestly excuse entries tend to be counter-productive. A pound for each of the definitions that appear below.

Contractual commitment: expansion on hours, leading to contraction of commitment.
Rationalist: irremediable.
Life: This miserable interim between two good movies.
Richard Eadsen

Teaching practice: aversion therapy for vocational dementia.

Student militancy: blinding the band one is subsidized to sit at the feet of.
Tom Brewer

Divorce: a process whereby people who have failed in one marriage are legally authorized to involve others in similar disasters. Equanimity: Christians ludding together for mutual support in an indifferent world.
John Stanley

Conatus: harassed apathy. Dénouement: the puppeteer's hand. Basil Ransome-Davies

Open plan: a design to cheapen that it ensured the discovery of educational reasons for its adoption.
J. M. A. Kilburn

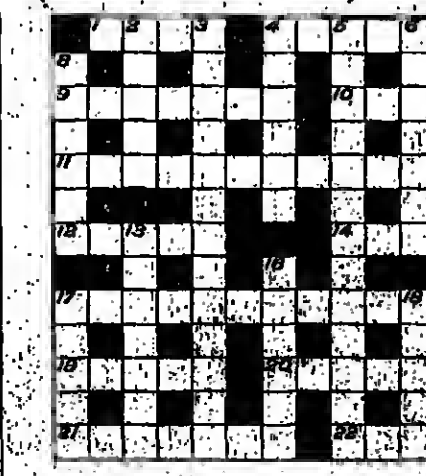
Sex education: the blind leading the blind.
Teachers' superannuation: penalties for heaven.

Alcohol: destructive preservative. Robert W. Layton
Abortion: interception of an unidentified intruder.
Monetarism: revival of the fantasy.
Committee: way of spending hours over minutes.
Deputy Head: Pontius Pilate's bodyguard.
A. A. Milder

Creative writing: a rearguard of last night's TV.
Sex education: telling children who does what to whom with what but not to whom with what.
Tom Haskin

Mixed ability teaching: promiscuous use of badly-printed workbooks.
Inquiry methods: the PhD approach to eight-year-olds.
Teacher training college: a sanctuary for theorists who failed to be practical.
L. M. Haskin

Crossword No 1,186



Across
1 The "oil" can
4 Naturally a...
5 Eastern...
10 Harrowing...
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Next competition: free verse fury

Competition No 3 Set by Charybdis
Bad free verse is appallingly easy to write: good free verse very hard. One of the few to bring it off lately, often was D. M. Lawrence, notably in this initial poem and his "Psalms" (pr. *Reviews*)—well

represented in the *Pent*. Selected Poems: there must be 1980 (the fiftieth anniversary of death) be many topics. Calculate: arouse Lawrence's free verse. Up to 16 places. From a contemporary. Party. Closing date: May 21

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NEWS

Labour victors get ready to sweep away grammars

by Sarah Bayliss

Plans to abolish selective schools in eight big cities are going ahead after resounding Labour victories in the local elections last week.

Out of the 10 metropolitan districts which still have grammar schools, Labour seized four from the Conservatives: Huddersfield, Walsall and Kirkleas (Huddersfield).

The party held Tameside with an increased majority of 15,000 over the Tories, and held Wolverhampton despite a 55.5 per cent vote rise on residents just a few days before the May 1 poll. Labour also stayed the biggest party in Liverpool despite predictions of a Liberal victory in the city.

In Calderdale (Halifax) Labour reduced the Conservative majority to a minimum so that the Liberals hold the balance with nine seats against 23 Conservative and 22 Labour.

All eight cities Labour candidates publicized their opposition to selective education and many had outlined plans for abolishing existing grammar schools. In about half, plans for reorganizing schools on comprehensive lines are likely to be submitted to the Secretary of State before the year is out.

Two other cities which still have grammars, Telford and Weymouth, have remained solidly Conservative and there the status quo in schools will be maintained.

The elections which affected 191 councils in England and Scotland outside London, showed an impressive swing to Labour, knocking down Conservative strongholds, notably Worcester, a non-metropolitan district, which they won for the first time.

The party's success in the metropolitan districts which run education services may be seen in the Independent Association of Metropolitan Authorities, previously held by the Conservatives by a majority of one. Labour now has control of 31 out of 38 metropolitan districts, leaving only Bury, Salford, Solihull,



Mrs Ann Taylor: A clear candidate for comprehensive schools.

Stockport and Telford to the Tories. Mrs Ann Taylor, Opposition spokesman on education and Labour MP for Bolton West, said there had been clear mandates for comprehensive education in several local elections. She hoped the Secretary of State would not stand in the way of less which now wished to abolish selection.

In Mrs Taylor's native Bolton six grammar schools are still intact. The Roman Catholic and Church of England diocesan boards already run their seven schools along comprehensive lines and there are three more comprehensive outside the diocesan boundary.

A plan for reorganization devised in 1977 still remains the dominant

factor, but is unlikely to be resubmitted because it is out of date. Any new plan will abolish the existing six grammars and will probably divide the town in half with each group of new schools serving by a sixth form or tertiary college.

In Kirkleas, based on Huddersfield, newly elected Labour councillors say they've been banging the drum "loud and clear" in favour of comprehensive education. Two grammar schools remain in the town and Huddersfield grammar, Miss Alice Kilbury, former Tory chairman of the schools subcommittee and a keen advocate of grammar schools, lost her seat in Huddersfield by 70 votes to the gloom of her Labour opponents.

Conservative proposals to end selection at the grammar schools were rejected by Mr Curdall, councillor this year. The Labour group, whose representatives met Lady Young, a junior education minister, last week believes a less costly scheme retaining some single sex schools might win the Government's approval.

However, the education spokesman, Mr John Manning, defends the high cost—£41m—once pupil numbers are still rising in Huddersfield and new provision is desperately needed to replace eight temporary classrooms.

In Calderdale, the Labour group will draw up a reorganization plan to change the status of the seven grammar schools which still exist in the Balgill and Halifax areas. With Liberal support the plan could be passed by the council.

In Birmingham, the new ruling Labour group is pledged to turn the city's seven voluntary old schools into comprehensive schools. The future of Sutton Coldfield School, which the Government said last week could revert to a grammar school, is in the melting pot. The group is determined to keep comprehensive.

In Walsall, Wolverhampton and Liverpool new Labour councils are also likely to make moves against a handful of selective schools.



Sign of the times: Printers work was all in vain. Aylesham got comp again. Plushback to 1976 when Tameside went selective.

Tameside all-in decision ends a 15-year battle

by Biddy Passmore

This week's Government decision to let Tameside have its comprehensive schools, an educational debate that has lasted 15 years.

Plans for ending selection in the area go back to 1965, when Lancashire and Cheshire councils submitted proposals for comprehensive reorganization which would have included Tameside. In 1974, when the area became a metropolitan district of Greater Manchester with its own education powers, the Labour-controlled council submitted its own plans, which would have turned all secondary schools into comprehensives in September, 1976.

However, these were thrown out by Conservatives when they gained control in May 1976, and an attempt by the Labour Government to force them to implement the plans ended in the famous House of Lords decision that ministers had overstepped the mark.

Labour regained control last May and immediately re-submitted comprehensive plans. Their approval this Tuesday means that the district's five remaining grammar schools and 20 secondary modern schools will make the change in September.

They will become 16 comprehensives for 11 to 16-year-olds—nine coeducational and seven single-sex—and two open entry sixth form colleges which will be based on the former grammar schools.

Mr Carlisle's approval of the plans is in line with two other recent and controversial decisions—at Epsom and Sutton Coldfield. The Government is not following a rigid line for or against comprehensive schools, but is taking local feelings into account. In the case of Tameside, however, voters turned to power the area last May with a virtual mandate to turn the district's schools into comprehensives.

Tameside councillors are "delighted" by the news. "I believe the future of all young people in the area will be brightened from today," said a jubilant Mr Roy Oldham, leader of the council.

The decision was reached in a week, but the announcement was delayed until after last week's local polls to avoid embarrassing local Tory candidates, who fought the election on a pro-grammar school ticket. It also allowed the Government to take the results into account in the unlikely event of a large swing to the Conservatives, ministers might have had to reconsider their decision, which was based on the strength of local feeling.

However, some boards have said it would be impossible to re-schedule public examinations. Mr D. J. Ramsden, secretary of the East Midlands Regional Examination Board, said: "If we had rescheduled, it would have meant pupils sitting three or four examinations on the same day. It was just impossible."

The TUC has written to all its regional offices urging local Transport and General Workers' Union officials in areas where there are difficulties to advise what examination boards to approach. The pupils' union has also written to all its regional offices urging local Transport and General Workers' Union officials in areas where there are difficulties to advise what examination boards to approach. The pupils' union has also written to all its regional offices urging local Transport and General Workers' Union officials in areas where there are difficulties to advise what examination boards to approach.

NEWS

Day of action could still disrupt exams, despite TUC assurances

by Richard Garner

Schools and colleges up and down the country will shut down for the day next Wednesday as the TUC calls for a day of action against the cuts and government policies. With transport coming to a standstill, inner city areas are likely to be hardest hit.

Hundreds of examinations scheduled for May 14 have already been postponed while there are still fears that children facing CSE papers next Wednesday may meet difficulties in getting to school—in spite of TUC efforts to declare examinations an essential service.

In addition, the complete stoppage by transport workers will mean children attending special schools for the handicapped or educationally subnormal will be left without transport for the day—either relying on their parents to take them to school or staying at home.

The biggest worry has been over examinations. The City and Guilds of London Institute has already rescheduled technical and craft exams due to be sat by students all over the country. Mr B. B. Phillips, secretary to the Institute, said: "We're not concerned about the teachers' action, but the difficulty students will have getting there."

In the north-west, the Associated Localities Schools Examining Board has postponed its CSE English literature, fashion, clothing and needlework examinations, due to have been held next Wednesday, until the following week. Mr Peter Lawrence, the Board Secretary, said: "It was felt that the major problem would be with transport."

However, some boards have said it would be impossible to re-schedule public examinations. Mr D. J. Ramsden, secretary of the East Midlands Regional Examination Board, said: "If we had rescheduled, it would have meant pupils sitting three or four examinations on the same day. It was just impossible."

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This week the National Association of Head Teachers asked all members to advise what they are "unusually difficult" to make alternative arrangements, such as home tuition, for pupils who cannot attend school.

Move to beat the shortage

by Bert Lodge

A one-year course to bring students without A level mathematics up to the standard of entry to a BSc maths degree will begin in autumn at the City and East London colleges.

Run jointly by the college and North London Polytechnic, the course will teach mathematics for half the curriculum with learning and communicating skills filling the rest. The course will be open to 10 per cent of the line for options, sports and computer studies.

Minimum age of entry will normally be 20 with special consideration for mature applicants. Applicants will be assessed at least O level maths or equivalent. "Something has to be done to break this vicious circle of not enough pupils teachers producing more fewer maths teachers," Mr Sidney Jones, head of teaching studies at North London Polytechnic, said.

A meeting for applicants and anyone else interested will be held at the City and East London college on June 3 at 5.30 p.m.

An earlier alternative entry to teaching scheme run by the two colleges has been so successful that the number of places on it has been doubled. Begin in 1977 to recruit more black students without conventional A level qualifications, the number of places goes up in September from 10 to 24. Mrs Jean Williams, senior lecturer at the City and East London college, said they were now taking white students who had not had suitable opportunities to enter teaching by the traditional route.

This course is also a one-year course and candidates must show evidence of mathematical and communication skills. On completion, students go on to the polytechnic for a two-year BSc degree.

Two of the organizations most active in youth employment, Youth Aid and the National Association of Youth Clubs, have taken part in a weekend conference at which they agreed to co-operate in a series of projects throughout the country. Other voluntary agencies and business firms are helping with money.

Survey claims no concentration of Asians, West Indians and disadvantaged

Mixed response to race bias report

by Bob Doe

A report on the allocation of secondary school places in Reading, Berkshire, which relates allegations of racial discrimination has been accepted by the county's schools subcommittee but challenged by the local community relations council.

The report, drawn up by a group of local headteachers, looked at claims that black children in the town are concentrated in schools with disproportionate numbers of the less able and socially disadvantaged. The Commission for Racial Equality is carrying out its own formal investigation into the allegations.

A dispute broke out in Reading in 1978 when redrawn school catchment areas for three secondary primary schools into the Alfred Sutton boys' and girls' secondary schools. After protests, spearheaded by the Reading Community Relations Council, two of these schools were re-allocated to other secondary schools and a working party of heads was set up to look into the question.

Their report, which now goes to the county's education committee, claims to show that Asian and West Indian children are not being concentrated in schools with large numbers of less able or disadvantaged whites. They looked only at children transferred in 1979, however.

On the basis of a survey carried out by the county's research unit, the headteachers found that 53 per cent (33 out of 62) of Asian pupils transferred to the two, single-sex, Alfred Sutton schools last year but that West Indian pupils were not concentrated in any particular school.

Every first year pupil in the town was tested with a National Foundation for Educational Research reading, comprehension test. On

this test four of the eight secondary schools in Reading had a higher proportion of low achievers than Sutton Boys' School. Two were worse than Sutton Girls'.

The measure of social disadvantage used was the proportion of children known to be eligible for free school meals. On this basis, the Sutton schools rated fifth and joint sixth worst out of eight in the proportion of indigenous children registered for free lunches.

Mr John Shearman, chairman of the Reading CRC and a local primary headmaster, said their main criticism had been met after the protests in 1978, but he was still not happy with the report. It was "too neat and tidy".

The CRC had obtained the services of two professional researchers to look into the report. It particularly criticized the measures of attainment and deprivation used. Many Asian pupils, he said, went to the town's religious dietary centres and it would not be known whether they were eligible for free lunches. The reading test would measure what they knew, not what they could do.

The head, who included Mr M. C. Smyth, head of Alfred Sutton boys' school and two members of the Reading CRC, concluded that it was of the utmost importance to avoid any proposals which could cause adverse publicity to any school.

The survey found average achievement in the eight town centre schools considerably below that of almost all the town's seven suburban schools. Even when the two grammar schools' results were added to the urban schools scores, the suburban schools' average was better.

The survey also found that Asian children had been in Britain, the better they did on the reading test, though those who had been here all their lives or more than six years still scored lower, on average, than indigenous children.

Scores of those registered for free meals were lower than those who were not, but the survey suggested that social background was more important to educational attainment than ethnic origin.

Packed lunches 'cost millions and cause chaos'

by David Lister

Children who bring their own packed lunches to school are the cause of millions of pounds of chaos, according to a report by the National Association of Head Teachers.

Mr David Hare, the union's general secretary, told THE TES this week that heads were furious that they were now forced to provide free facilities. In practice this meant schools would be littered with food packets.

To add to the chaos, the confusion is caused by the school meals organizers, who are not allowed to enter the school grounds.

lunches, children bring often inedible food. And one child education officer said that when they saw children brought to school with a lunch which was only a loaf of bread, they were often told to eat it.

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cleaning up after these children will be £65,000. The cost nationally will run into millions.

She added that Lady Young, junior education minister, told her association that the children who brought their own lunches to school were often told to eat it.

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later this month. Mr Dick Foster, deputy general secretary of the NAHT, said this week that packed lunches were still causing head teachers problems.

Schools often don't have the facilities where food can be stored and eaten," he said. "I went into one school the other day and the delightful library was crammed full of packed lunches. One of the used the doors there."

He added that authorities were not approaching the problem in a consistent way. Some forbade children to bring knives, forks, plates or cups to school with their packed lunches. Others allowed children to bring knives and plates, often locked from containers on to classroom floors.

The inconsistent approach was illustrated by the action of two authorities this week. Avon's director of education, Mr Geoffrey Crump, has written to parents of primary school children saying that pupils will be banned from taking anything but water with their meals, because of the dangers of spillage if pupils bring their own drinks. And Richmond upon Thames's deputy education officer, Mr Donald Naimish, has written to parents saying that because school milk is no longer available, it will be more important than ever before to provide suitable liquid refreshment.

Meanwhile, the Child Poverty Action Group, which is for the Campaign for the School Meals Service, as a result of the Act. The group is particularly concerned that many children are being entitled to free meals.

Authorities cited by the GPAG include Berkshire, Cheshire, Suffolk, Bromley, Warwickshire, Richmond, West Sussex, Essex, Hampshire, and Wiltshire.

The group says that several authorities are only providing free meals for children on supplementary benefit or family income supplement.

Students told to apply the raspberry test

Students should train themselves to be amateur journalists to pass exams according to Mr. Hare.

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Maths, science standards 'not falling'

Education officers this week defended maths and science teachers against accusations in the Planism report that these subjects are badly taught in schools.

In response to the recently published report on the teaching profession, the Society of Education Officers states: "We should make it clear that support in the view of the report that standards in mathematics and science are falling and that these subjects are badly taught."

The apparent poor achievement of some engineering students in these subjects may in fact be due to the fact, underlined repeatedly in the report itself, that it is often the less able student who opts for an engineering course and that this in turn stems from the limited professional and financial appeal to the more able student of a career in engineering.

The SEO also challenges the argument that early specialization in schools reduces the number of pupils eligible to become engineers. The society says: "A variety of opportunities already exists within schools and colleges of further education to enable potential engineers to cover the necessary basic ground."

However, the SEO adds that it does support training in maths and physics in the secondary school curriculum as late as possible.

The Government's assisted places scheme should not be confined to schools with an exceptionally high academic standard, the society adds. It calls for a public review of the scheme and a study of the reasons why the highest standards in other areas should also be included.

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Need advice? Take a tip from the Barnsley classroom survival kit

by Rob Doe

Anyone who sets out to solve all the thousand and one problems faced by teachers must either be very brave or a fool. Yet that is what Mr Ron Dawson, a headmaster in Barnsley, is trying to do in a project that nevertheless seems far from foolish.

With an Urban Aid grant and the backing of Barnsley L.E.A., he is working on TIPS—teacher information packages. These, in hopes, will eventually cover every difficulty primary teachers are likely to meet from bad handwriting to children wetting their pants.

Each TIPS—and so far there are 31 of them—deals with a specific difficulty. They give teachers general background information and help to sharpen their diagnostic powers of what exactly is wrong.

Then they suggest practical remedies, other sources of help and ways of judging whether the treatment is successful or not.

As well as covering learning and behavioural problems, they cover physical complaints such as poor eyesight and epilepsy (giving something between the two is out, apparently), and environmental factors such as poverty and home background.

No one person can possibly know everything a teacher might need in, says Ron Dawson. And lack of time and limited local libraries often mean it is not feasible for them to research every child's problem themselves.

Not that Mr Dawson alone could research the 1,000 or so TIPS he reckons will be needed either. Most of those he has written already have been in response to difficulties already faced by Barnsley teachers.

He is trying to encourage teachers themselves to write them. Psychologists in the city's child guidance service are contributing such sections on handwriting, and the left handers and Ron has turned to outside bodies for lesser known complications such as children sub-

feeling from coeliac disease who must not eat certain foods. Reading in the Celiac Society's information sheet that such children are often more robust than normal children will reassure teachers who know such a child is about to join their class, he says. It would also equip them better to cope with saying: "Please miss, I can't do PE. I'm coeliac."

Started in 1978, such a daunting undertaking is obviously still in its early phase. There are gaps and mistakes, Mr Dawson recognizes. Trials in 22 Barnsley schools are highlighting them.

A last on excessive calling out in class was returned straight away. Its strategy of getting such a child to keep a detailed record of the impulse to call out was aimed at the attention-seeking child. The unit now has to be revised.

The list of other problems teachers have come across includes eating pencils—apparently a sign of dietary deficiency, belligerence, alyssa, insolence, swearing and lack of bladder control.

The list reveals another difficulty with such an information bank. Some of these are already covered by TIPS but under a different name than that used by the teacher. There is a sorting and sifting section for instance.

So the card index which is the guidebook to the bank will have to have more cross-references added to cater for the different ways teachers see problems.

Criticism about the brevity of the notes that the recipes for action may just cause the symptoms and overlook the underlying causes. But Mr Dawson says: "The idea is to give teachers a starting point for their own investigation."

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Ron Dawson: "TIPS" who gathers educational "form".

The so-called experts often did not know much more about these problems than can be written on four or six sides of paper, though they rarely admitted so. Often the symptoms were the problem, or the underlying cause such as a drunk father, something beyond the teacher's address.

TIPS cover far more than even several in-service training courses could and arguably relate much more directly to the particular difficulties a teacher faces.

Mr Dawson criticizes the idea that school need greenleaf tests to sort out their problem children. The Warnock report estimated that 20 per cent of children need special attention at some time. Mr Dawson says only about 1 per cent will get it in special education.

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Most of the comments from trial schools suggest TIPS are useful, or will be when completed and polished. Large chunks of letters hurriedly lifted from American sources in the scramble to get the project off the ground have not gone down well and various units are due for rewriting.

Some of Barnsley's educational psychologists are keen too. Children are referred to them much more systematically and with more information to go on, it is claimed.

The trials schools seem enthusiastic. Mrs A. M. Rimmington, head of Ladywood First School, Grimsby, said staff were looking at it all the time even when they had no particular difficulty.

"It has not solved all our problems but many of the suggestions in it are helpful," she said. "It is not just gathering dust."

"An excellent idea," was the verdict of Mr Dennis Smith, head of Heyland Community Junior, Staff had already made considerable use of it, and it would save a lot of time when completed.

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University part-time study policy attacked

by Biddy Passmore

British universities did not take the continuing education seriously, Professor A. H. Halsey, Director of Oxford University's Department of Social and Administrative Studies, said last week. Only about 2 per cent of a potential 20 million adults were being retrained, he said, and the financial commitment of the universities was a mere 1 per cent of their total spending. Even if this were doubled, it would be "still trivial".

Speaking at a one-day conference on the universities and continuing education sponsored by the Committee of Vice-Chancellors and the Universities Council for Adult Education, Professor Halsey took issue with a number of previous speakers who had praised the universities' extra-mural provision. But he pointed out that the universities, with their tradition of strengthening and maintaining the status quo, might not be the right instrument for continuing education, which implied reaching out to new classes and groups.

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Science and maths crisis worsens as teachers leave and posts stay open

by Bert Lodge

More than one in four vacancies for junior maths and physics teachers are caused by the previous holders of these posts leaving the profession, a research project has discovered.

It shows the average number of applicants for a science and physics job is much less than two and for maths about five. Yet the average number of applicants is so low that just over one-third of posts remain unfilled because heads do not feel able to appoint any of the small field of candidates.

As the start of a monitoring exercise on the shortage of teachers in physics and maths, Mr Bryn Chapman, lecturer at the Centre for Studies in Science Education at Leeds University, counted almost 700 maths and physics vacancies advertised in the TES from February 22 to March 14 inclusive.

Questionnaires were sent to the heads responsible for the advertisements asking the reasons for the vacancy, the quality and quantity of the responses and what the head would do if unable to fill the post satisfactorily.

From between 400 and 500 returns he found that over 25 per cent of all science and two posts advertised were the result of teachers leaving. Destinations mentioned were computing, technical writing, Royal Navy, police, atomic energy authority, civil service, commerce, postal services and holy orders.

About 20 per cent of science and two vacancies resulted from the previous holders being promoted. This was more frequent for physics and chemistry than for maths.

Another reason was an increased demand for the subject. "This was more evident in the physical sciences than in mathematics," about 20 per cent of all science one

and two posts are attributable to increased demand. Mr Chapman comments: "The impression that is emerging from this monitoring exercise is certainly one of crisis. Given that since Easter the number of posts being advertised has ascended (over 25 columns of science advertisements in the TES of April 18 alone) it must be clear that the teaching of physical sciences will have to be unacceptably restricted in very many schools next year."

Asked what they would do if the science post remained unfilled, a significant number of heads said they would re-appoint. "Often they feel they will have to use the carrot of a scale post even though they may not want to do so," he says.

Clearly some candidates are aware of the market forces operating and are not prepared to take scale one posts any more. "Often they feel they will have to use the carrot of a scale post even though they may not want to do so," he says.

Other alternatives considered by heads were reappointment of present staff, trying for an untrained graduate, sending circulars to Oxbridge colleges, sending sixth form pupils to a local FE college, withdrawing science from the first year, reassigning staff in order to offer a scale three, appointing a chemistry specialist to teach physics, sharing the teaching with another school or abandoning a level physics.

Although the situation regarding mathematics teachers is not so critical, heads faced with unfilled vacancies suggested they might use staff intrained in the subject below examination level or reduce the amount of mathematics taught in the school.

Mr Chapman notes that certain areas of the country, notably the south-west, seem to have no demand for this kind of the country. About 10 posts for teaching physics are now vacant in the country.

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grammar schools. But even in these cases heads comment on the significant decline in applicants compared with a few years ago.

"A 2000 a year increase in the number of posts in a school with an entry requirement of two A levels."

Moving for a salary increase of £2,000 a year with much better prospects in a job with an entry requirement of two A levels.

Local teachers playing the situation are only one solution in the problem, says Mr Chapman. "One principal in the independent sector commented that the market price for a good physics tutor is over £8,000 a year. Some means of paying 'over the odds' was suggested as the only solution to the problem by several heads. As one put it: 'Urgent action on a national scale is needed if physics and chemistry are to survive as serious subjects'."

The project is continuing to monitor advertising for maths and science vacancies in selected weeks this year. "It is anticipated that the results of this work will show an increasing deterioration of the situation," Mr Chapman says.

In an effort to attract physics teachers, Leicestershire education authority has guaranteed at least eight jobs to physics specialists coming out of Leicester university's postgraduate certificate in education course this year.

It is believed to be the first arrangement of this kind in the country. About 10 posts for teaching physics are now vacant in the country.

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TUC General Secretary, Lew Munn, is joined at the piano by Prunella Scales, Clive Jenkins, William Rushmore, and Trevor Phillips, outgoing President of the National Union of Students.

Introducing stars of stage, screen and national executive

The TUC dropped its Trafalgar Square image last week to declare loudly to the Government through songs and sketches as well as speeches: "We Don't Want to Work on Maggie's Farm No More."

The famous Theatre Royal in Drury Lane became the setting for a rally in defence of the arts and education in which entertainers such as George Melly, William Rushmore, John Wells, and Paul Jones' Blues Band combined with such speakers as Neil Kinnock, Trevor Phillips, outgoing president of the National Union of Students, and Lew Munn, general secretary of the TUC, to put across the out-casts message.

So a speech in which Mr Kinnock attacked private education and

called for "the extermination of those institutions and influences in society which perpetuate inequalities" was followed by Neil Kinnock's belting out the lyrics of the Bob Dylan song "We Don't Want to Work on Maggie's Farm No More" and a quiz from comedian William Rushmore to the effect of: "I've a lot of time for Neil Kinnock—but not one for an opposition spokesman and juggling at Ethel's Abolished."

Coinciding with the rally, the TUC opened its own exhibition at Congress House in defence of education which includes a children's arts display mounted by the National Union of Teachers and a poster and picture display on the work of nursery schools. It remains open until this evening.

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Christian unity in Wales

Catholics and Anglicans in south Wales have agreed in principle to share facilities after their mutual Bishop, Clive Jenkins, said that because of the small size of both Anglican and Catholic churches in Wales, sharing resources would be a logical step.

Mr. Nor. Derrick Childs, Anglican Bishop of Monmouth, said that while he had been talking with the Catholic Bishop, Clive Jenkins, about sharing facilities, he had been talking with the Catholic Bishop, Clive Jenkins, about sharing facilities.

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NUS move on register for jobless

The National Union of Students is asking its members to register with the National Union of Students (NUS) to help it to find jobs for its members.

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London head appointed new PAT chief

A 46-year-old headmaster of a London comprehensive is to become the first general secretary of the Professional Association of Teachers (PAT), the union whose members pledge never to go on strike.

He is Mr Peter Dawson, who has been head of Bishop's Cleeve Comprehensive School for the past 10 years. He will be taking up his duties in the Derby headquarters of PAT in September.

Mr Dawson said after his appointment: "I am very worried indeed about the way in which the public view of teachers is being eroded by the way some members of the profession are behaving. Some have greater concern for their own interests and prosperity and for the reputation of the profession than for the children."

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MSC ready to launch improvement plan for employment

Job projects may be merged

Major changes in the programmes for the young unemployed are now being considered by Government ministers. They include a proposal to merge some projects for school leavers with schemes for young adults.

The proposals have been prepared by the Manpower Services Commission as part of a general review of services for the unemployed. The review is largely in response to the pressure during recent months from the present employment minister, who feels that the current system of improving the programmes, which are still virtually the same as when they were launched by the last Labour Government, is inadequate.

Ministers have been urged by others involved in the programme, such as the voluntary agencies and local authorities, particularly if it includes the massive reliance on subsidising work projects with outlay, which the Treasury favours because it is much cheaper than providing training.

The idea of lowering the barriers between the Youth Opportunities Programme and the Special Temporary Employment Programme, on which the Government has been spending a large sum of money, has been kept rigidly separate. But Lord Gowers, junior employment minister, has come round to the view that it is better to run two projects for the price of one, more or less, than to have two bills just to keep the books straight.

Meanwhile plans were announced this week for a public, but unofficial, inquiry into the way the

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Booklet boosts engineering prospects

A booklet intended to make pupils consider engineering careers while they still have time is being distributed to schools by the Council of Engineering Institutions. The booklet outlines the range of jobs available in the industry, and the importance of engineering in the modern world.

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Sudeley Castle AND GARDENS

Historic Sudeley Castle, art and garden, south of Exeter. Open daily 12 noon-5.30 pm (grounds from 11 am) March to October inclusive. Entry free. Tel: 0392 662388.

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TES SPECIAL REPORT

Parents throughout the country are being forced to pump thousands of pounds a year into schools to pay for basic textbooks and materials that the state is increasingly failing to provide. Educational standards have been so threatened in some areas by successive spending cuts that dozens of schools have had to turn to parents and well-wishers to help pay for essential materials and services.

In some rural areas where schools are being run down several parents' groups have tried, largely unsuccessfully so far, to chip in to pay the salary of an extra teacher.

Though much of this growing parental involvement may well be a passing fad, some local authorities seem willing to turn a blind eye to it or even encourage it.

Several schools have asked parents, and even children, to contribute up to £10 a year towards the cost of books and equipment, and in some areas there has been growing pressure on parents to pay the full cost of "extras" such as swimming and music.

With the shortage of money for cleaning, decoration and minor alterations to schools, there has been an increase in self-help schemes under which parents, pupils, and teachers do some of the work themselves, often under the guidance of the local authority.

Though some politicians and parents have argued that this trend is educationally valuable, because it encourages parents to take a greater interest in their children's schools, many teachers are worried that schools in less prosperous areas will inevitably suffer. Many have complained that they are already spending too much time fundraising, and there is a widespread fear that successful fundraising for basics will give local authorities an excuse to cut capital expenditure for books and equipment even further.

Parents have traditionally raised large sums for their children's schools through parent-teacher associations, but until recently the proceeds of their summer fairs, lunch sales, and other events were being used to pay for extras that the local authority could not be expected to pay for. At one time it was mini-buses or swimming pools, more recently micro-computers.

But the effect of the education cuts has radically altered the direction of much PTA activity. It is increasingly having to pay on "absorbable" items such as the fuel for a school's boiler, or the maintenance of the school's roof.

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Though it is possible that some of the money raised by PTA events will be used to pay for extras that the local authority could not be expected to pay for, at one time it was mini-buses or swimming pools, more recently micro-computers.



Education Act, 1944.

61.—(1) No fees shall be charged in respect of admission to any school maintained by a local education authority, or to any county college, or in respect of the education provided in any such school or college.

Is it illegal to charge for school text books? The 1944 Education Act (see above) says so, but throughout the country bingo, fashion shows and unpaid labour are helping finance basic education. Philip Venning reports.

Getting by with a little help from their friends



● Sixth-formers at Wykeham Comprehensive gave a fashion show to raise funds for text books, while bingo provides cash for a school in East Anglia.

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ing high fees for optional extras. Shropshire: Recently greatly increased the charge for all music tuition that is not normal class music lessons—or withdrawing things like swimming, which parents have then started paying for by various subterfuges such as running "swimming clubs". The direct charging of fees by schools is illegal but parents would rather pay for the service by arguable means than lose it. Occasionally charges come closer to the mainstream of the curriculum—an A level geology student may have to pay towards a required field trip.

Another way parents are helping compensate for the cuts is in paying for, or doing, themselves, minor redecoration and alterations in some schools. It was not unknown in the past for parents to put up shelves in a school library, for example, but the extent of this appears to be growing as public money runs short.

Much of this work falls within the legitimate activities of a PTA. Parents at Hales Primary School, Suffolk, recently extended the library with PTA funds and gifts of books from an individual and parent from a local firm. Some authorities have long had an official policy of encouraging "self-help groups" with an agreed procedure to ensure proper standards of work. Hales Primary School, Warminster, called on parents to install a new kiln provided by the local authority. And what plans to put up blinds had to be dropped because of the cuts, the head asked the PTA to pay for them instead.

In North Yorkshire the redecoration of two small schools was postponed by the cuts, so the pupils did the work. And at the Royal Grammar School, Worcester, GCE candidates opened the time after exam time to redecorate the school. The first thing they did was to like paper hanging, while pupils an optional person pupils use the craft department to help mend desks and put up shelves.

More controversially, some parents, such as those at North Essex Primary School, Avon, are reported to have gone into schools at the start of last term to spring clean. In Cheshire the National Union of Public Employees protested strongly earlier this year at what it believed were plans by the authority to encourage parents to do the same.

Even more controversially, in a handful of village schools faced with closure or reduced staffing, parents have proposed clubbing together to pay the salary of a janitor. The legal problems here are highly complex, and it is likely on these grounds that the proposal, such as that by the PTA of St. Wilfrid's Primary School, Ellesmere Port, have been turned down.

But parents at Barnhill Primary School, West Sussex, seem to have avoided these difficulties by persuading the authority to appoint a part-time teacher to work in the school as a volunteer. The parents then pay the teacher the equivalent of a teacher's salary, as an "honorarium".

Better known to Lewknor School, Oxfordshire, where a teacher's salary is paid for two years by several parents, including Living, raising, in this case the local authority accepted full responsibility for the development of the school.

The NUT has been having joint talks with the National Confederation of Parent Teachers Associations, which is worried by the trend. The National Association of Head Teachers has also warned its members to beware, but everyone admits that it is impossible to prevent parents from wanting to protect their children from the effect of cuts and heads from wanting to make up the shortfall in their budgets.

Strongest support for volunteerism has come from Mr. Gary Neale, MP for North Cornwall. He became involved when parents at St. Weno School put up an ambitious plan to help save the school from closure, which was turned down with some reservations by the local authority on legal and educational grounds.

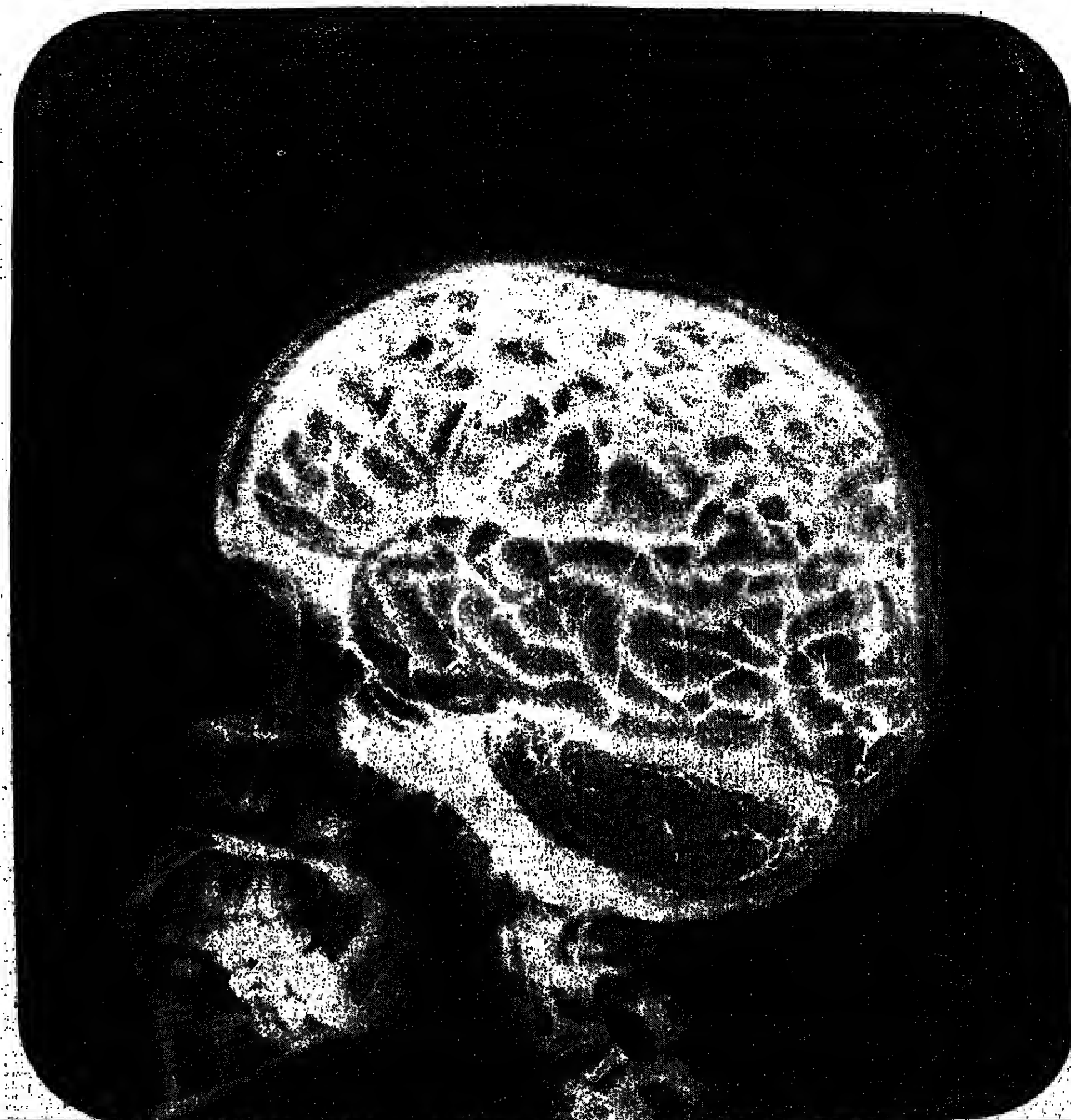
Mr. Neale successfully introduced a 10-minute rule Bill into the Commons to make legal provision for local education authorities to accept voluntary financial aid and voluntary services. He is now pressing for a clarification of the law.

The exact extent of the crisis depends on how generous a local authority is and how much the individual school regards as essential. There is also wide variation between schools over what routine items the parents are expected to pay for. School uniforms has always normally been bought by parents.

In some places the school provides almost everything else, while in others parents may have to pay for pencils, some stationery, craft materials, sports goods, pocket calculators and geometry sets, for example.

As a result of the cuts, some local authorities have either started charging high fees for optional extras.

Shropshire: Recently greatly increased the charge for all music tuition that is not normal class music lessons—or withdrawing things like swimming, which parents have then started paying for by various subterfuges such as running "swimming clubs". The direct charging of fees by schools is illegal but parents would rather pay for the service by arguable means than lose it. Occasionally charges come closer to the mainstream of the curriculum—an A level geology student may have to pay towards a required field trip.



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Protests and strikes bring disruption to all levels

by Jane Jessel

PARIS — Strikes by teachers and school ancillary workers, and violent student protests, have combined to cause disruption throughout the French education system in recent weeks.

Parents have also gone on strike, refusing to send their children to school.

The teachers' strikes are part of a continuing protest against pay and working conditions. They were called by the *Fédération de l'Éducation Nationale* (FEN), a left-wing teacher union umbrella group, as a demonstration against the cutting of the education budget, the closure of school classes (due, the Government says, to falling rolls) and a loss of teachers' jobs (TES, March 14). It was also a protest against a deadline in pay negotiations and the restructuring of the school holidays (TES, January 11).

It was the first time since the upheavals of 1968 that all sectors have acted jointly.

M. André Henry, general secretary of FEN, commented negotiating with the Government to "throwing oneself against a wall of obstinacy". When negotiation failed, he said, unions had to turn to their ultimate weapon.

The Government, however, remains intransigent, blaming teachers' attitudes rather than policies for the general discontent in education.

M. Christian Beullac, the Education Minister, said that the rare and attention teachers gave to children were more important than the size of classes in which they worked.

M. Raymond Barré, the Prime Minister, denied Government complicity and loyalty, and denounced movements inspired by other considerations than safeguarding the educational system.

Meanwhile, student protests at Paris, Caen and Grenoble against new measures being introduced to reduce the number of foreign students disrupted into violence when police tried to avoid students occupying university buildings. At Lyon, overseas students began a hunger strike in protest against a new French language examination for foreign students are now supposed to take.

Student protests were expected to escalate this week with a proposed "national day of action".



Teachers continuing protests

Ten thousand machines by 1986? Jane Jessel

French press on with classroom computers

PARIS — The French Government is carrying out the first stage of an ambitious programme to furnish 10,000 microcomputers into French upper secondary schools. During the current school year it is planned to install more than 400 computers in about 140 lycées as part of a project which will provide 10,000 machines by 1986.

The French, who feared they were falling behind in the technological age during the 1960s, have been making up for lost time during the past decade with an enthusiasm which sometimes seems to have turned the country's administration into a vast data bank.

Practically every sector of everyday life now seems to be computer-controlled. For example, the government will begin next year to phase out telephone directories and replace them with computer terminals in subscribers' homes and offices.

Telephone alarm calls are already available automatically in some places, simply by dialling into the system the subscriber's telephone number and the time the call is required.

In keeping with this rapid technological development, the Government took a decision in 1978 to introduce computer-assisted teaching for 15 to 18-year-olds. A pilot scheme, under the direction of the *Ministère National de la Recherche Pédagogique* began in 1972 when 58 lycées, out of a total of 1,200, were equipped with microcomputers. Following the success of this experiment the Ministry of Education and Industry are jointly extending the project with their so-called *Opération 10,000 micro-ordinateurs*.

The programme is a logical development of the expansion of technological education introduced by M. René Haby, Minister of Education in 1977. It will provide students with a basic understanding of computers and data processing, but is not seen as much as a new subject in itself than as a means of transmitting information in all subjects as the participation of the Ministry of Industry might suggest. It is also expected to provide some stimulus to the French computer industry.

During the 1972-6 pilot scheme, the 58 lycées were equipped with microcomputers, which had a central unit and a minimum of eight terminals. The 500 or so terminals were used on average 20 hours a week. By the end of the experiment more than 400 programmes had been produced, covering the whole range of subjects: mathematics, sciences, languages, literature and arts. A basic computer language was specially devised, based on French vocabulary.

In spite of the experimental nature of the scheme, its users considered that 70 per cent of the material was "good to excellent". A Ministry of Education report attributed this satisfactory result to high teacher motivation.

About 500 teachers were given full training for the scheme, and a further 5,000 took correspondence courses. Teacher training accounted for about half the cost of the project, the cost of which was estimated at £10m.

The other half was approximately split between equipment and

teacher research for programming.

About 10,000 teachers need to be trained in order to introduce more than 10,000 computers by 1986. At present the computer is to be used as a teacher's aid only. In spite of the programme's heavy costs and the Government's need to find savings in the education budget, teachers need have no fear, at least for the time being, of being replaced by a huge data-bank. Unions representing lycée teachers on the whole support computer-assisted teaching, but some are still sceptical. The continuous teacher training is provided, without which, computer education will be limited to a few elite opening for industrialists and the conditioning of future computers.

The introduction of 10,000 computers, however, seems only a beginning when this consideration will be available only to those pupils who reach the lycée which is the second stage of secondary education, and there will be one terminal for 70 pupils—one for two classes.

According to M. Jacques Hebrard, head of computer studies at the *École Supérieure d'Informatique* in Orsay who led the Ministry of Education's special commission looking into the project, for each student to have the use of one terminal for a day, 100,000 machines would be needed. To extend the scheme to the first secondary cycle, the college, it would be necessary to add 300,000 computers, and another 300,000 to take in primary education. Another 300,000 would be needed to cover nursery schools. So for computer-assisted teaching to become an everyday occurrence, between one million and one and a half million machines would need to be installed. "If we reflect on the present difficulties which such an operation would encounter, without even talking about the considerable sums of money involved in investment and for materials and teacher training, it is evident that this would be a very long-term project", M. Hebrard said.

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Uganda Minister appeals for basic equipment

Uganda is in urgent need of the most basic educational equipment, including pens, paper, laboratory chemicals and sports equipment, to help build up its shattered school system.

An appeal for such materials was made in a letter from the Minister of Education, Mr. Conrad Nantambu, to delegates attending an international conference on the reconstruction of Makerere University, Kampala, which was held in Italy recently.

The Minister said in her letter that school buildings and furniture are in need of rapid replacement. Service courses are needed to maximize teachers' resources, and there is a great shortage of trained science and technical teachers, and education administrators.

Uganda plans to review teacher training in the light of plans to set up a community-based education system with a strong vocational bias, the Minister's letter said.

The nation that prays together in school finds itself in court

by Clive Cookson

WASHINGTON — New attempts are being made across the United States to introduce organized religion into public education, despite the clear statement of the First Amendment to the American Constitution that church and state should be separate. Every week courts across the country are being asked to stop schools violating the constitution.

Over the past week, which has not been atypical, the following cases have been in the news:

- The United States District Court for Northern New York ruled unconstitutional an attempt by a group of pupils to organize prayer meetings in their secondary schools before morning classes. Their lawyer, they just wanted to pray: "Good morning, God, help me make it through the day."
- The United States Eighth Circuit Court of Appeals decided two to one that schools in Sioux Falls, South Dakota, could observe religious holidays approved by an interdenominational committee, including Christian and Jewish holidays.
- The Kentucky Supreme Court split three to three on the constitutionality of a state law allowing the Ten Commandments to be posted on public school walls, if the posters are paid for privately.

The year's biggest school prayer case so far concerned a new law passed by the Massachusetts legislature, which required teachers to hold a short daily prayer period in their classes and invite participation by pupils. As soon as it took effect, in February, groups such as the American Civil Liberties Union, the American Jewish Congress and Madalyn Murray O'Hair's Society of Separationists took legal action. As soon as the Massachusetts Supreme Court duly struck down the law as a violation of the First Amendment.

Observers said the brief life of the Massachusetts prayer law was marked by general confusion and embarrassment for teachers and pupils. Although the prayers were supposed to be voluntary, pressure ensured that few children asked to be exempted.

The United States Supreme Court ruled categorically in two highly controversial landmark decisions in 1962 and 1963 that mandatory prayer and Bible reading could not be held in public schools. The rulings did not state so clearly that voluntary prayer is necessarily unconstitutional, though many legal scholars believe that was their intention.

Most politicians of national stature and most mainstream churches oppose voluntary prayers and the introduction of any form of organized religion into public schools—churches can do what they want in their own schools, so long as they do not receive public funds. When President Carter was asked at a recent news conference for his personal opinion as to "how again" a prayer should not be encouraged in public schools because it "ought to be an individual matter between a person and God".

However, the United States is an extraordinarily religious country. Opinion polls show consistently that one-third of the population regards itself as born-again Christian and two-fifths has been to church or synagogue within the past week. So it is not surprising that there are strong pressures on state and local politicians to allow religious activities in public education.

Many of the rapidly growing fundamentalist Protestant sects advocate prayer in schools. So do many Catholic groups.

West Germany Move to give migrant children citizenship provokes outcry

by David Dungworth

The Federal Government is making it easier for the children of immigrant workers to become West German citizens.

It is proposing to allow those who have been resident in the Federal Republic for a minimum of six years to apply for citizenship, provided they do so before their twenty-first birthday and also give up their previous nationality.

In addition, all young foreigners are to be given the right to apply for work permits without fulfilling the waiting times currently in force.

Other features of a wide-ranging programme approved by Chancellor Helmut Schmidt's Cabinet include: intensive German language courses for immigrant school children and a comprehensive advisory service on social matters, vocational education and employment outlets.

The Federal Ministry for Education and Science is also to sponsor a series of research projects designed to investigate ways of promoting contact between kindergarten, schools and foreign parents.

Although it is estimated that the cost of adopting these measures will be up to 1.5 billion (about £150m), the Federal Government believes that they are necessary to provide equal opportunities for foreign teenagers and prevent the growth of an army of dissatisfied young second class citizens living in overcrowded city ghettos.

West Germany now has 1.4 million immigrants under 18, almost one in 10 of the total age group. About half of them were born in the Federal Republic.

Many attend school only irregularly or not at all, especially the girls who frequently have to look after younger siblings or help in the home.

Each year 45,000 immigrants

Cash crisis hits refugee programme

Schools for Palestinian children in Jordan and Syria may close this summer. The consequences could be 'disastrous'.

By Christopher Walker

AMMAN — The education of several hundred thousand Palestinian refugee children is threatened by a serious new financial crisis which has hit the United Nations agency responsible for providing them with basic services.

Last month, the United Nations Relief and Works Agency (UNRWA) handed a formal ultimatum to the Syrian and Jordanian governments warning that all its schools in the two countries would have to be shut down by August if the emergency funds are not made available to meet the agency's deficit of \$57,000,000. The schools provide education for an estimated 178,000 Palestinian children aged between six and 15. Many are educated in sprawling refugee camps which still scar the Middle East, and UN officials are seriously worried about the social consequences which could result from the shutdown.

Already the Jordanian Government, whose economy depends heavily on foreign grants, has indicated unofficially that it will be unable to take over the schools. A similar response is feared from Syria where the administration of President Assad is coping with widespread internal unrest.

"The crisis is the most serious we have faced in our 30 years of helping displaced Palestinians," Mr. John Tanner, the British-born director in charge of UNRWA's operations in Jordan, said. Jordan contributes 89 per cent of the 1,600,000 registered Palestinian refugees.

Originally founded on a temporary basis in December 1949, UNRWA now claims that some justification to discontinue a unique educational system in its five fields of operation: Syria, Jordan,

Lebanon and the Israeli-occupied West Bank and Gaza Strip territories.

Using mostly qualified Palestinian teachers, the system employs four different sets of text books (Gaza is still under the educational auspices of Egypt) and mirrors the education of the host country. This makes it possible for Palestinian children to further their education in upper secondary schools and universities and to take the state examinations of the countries involved.

Ironically, the agency's financial crisis is largely the result of a sudden, unexplained cutback in funding by the rich Arab oil producers—who have always been reluctant to provide money for relief work among the Palestinians. "They claim that they did not create the problem of Israel, so it is not their responsibility to clear up the mess," Mr. Tanner said.

Because UNRWA's task was considered by the international community to be only temporary when it was first set up after the creation of the state of Israel, its funding has always been on a voluntary basis. Frequent attempts to secure regular official funds from the United Nations have failed because of the opposition of most member states.

The threatened total cutback in schooling in Jordan and Syria has been decided on rather than more limited cuts in the five operational fields since United Nations officials feel that it is equally likely that any such cutback as all would be available in either Lebanon or the occupied territories.

With the gradually improving living conditions of the Palestinians, two thirds of whom now live outside the 61 remaining refugee camps in the Middle East, education has become the largest and most expensive area of the agency's relief work—accounting for some 60 per cent of its total budget of \$21m.

"Because of the work we have done already, we do not have starving children on our hands anymore," Mr. Tanner said. "But the world community should realize that the collapse of the education system for the Palestinians could have disastrous consequences in the present volatile state of the region."



Palestinian children in a refugee camp near Amman (below). And the area of UNRWA's operations (right.)

Sweden Day centres closed by labour disputes

by Chris Mosey

STOCKHOLM — Swedish day-care centres and schools have been hit by the wave of industrial unrest that has brought the nation to its worst labour relations crisis since the 1969 general strike.

Child-minders and preschool teachers in the Solna area of Stockholm, joined a strike of 14,000 public sector workers, which halted all air traffic into or out of Sweden, disrupted shipping, closed the Stockholm underground, and led to delays and cancellations on trains and buses.

All educational radio was halted and school programmes on television were blanked out by the strike. Several classes had to be cancelled in schools around the country when teachers failed to arrive because of transport problems.

Only the Solna day-care centres were officially on strike, but others joined in unofficially as staff took the opportunity to protest against low pay and under-staffing.

Parents were forced to stay at home or take their children to their work places.

But Mr. Donald Monvall of Stockholm's social services, said that in many day-care centres staff were having to work overtime despite an official union ban.

A lot of parents are having trouble getting their children to school, Mr. Monvall said. "Staff have to stay behind looking after the children until their parents get there."



Palestinian children in a refugee camp near Amman (below). And the area of UNRWA's operations (right.)

Australia More jobs for young workers

by Bill Purvis

SYDNEY — There has been a significant drop in the number of unemployed young people in Australia, but the opposition Labour Party claims it will create even more jobs than it has lost since the federal election last year.

The latest unemployment figures show that the total unemployed has dropped 34,000 from the previous month to just over 340,000.

This is the biggest monthly fall for two years. Nearly half the decrease was due to school-leavers finding work. The number of 15 to 19-year-olds looking for their first job fell from 72,500 to 57,200.

The Government claims that its sound economic management over the past few years has been the reason for the reduction in the national unemployment figure to 6.1 per cent of the labour force.

The Labour Party, however, claims that the level of what it terms "hidden unemployment" of unskilled workers is still high. In an important statement on employment policy the party's federal leader, Mr. Bill Hayden, end its employment spokesman, Mr. Mick Young, have unveiled a plan for 100,000 people, half of whom would be aged 16 to 24.

The plan comprises:

- The establishment of a community service corps to create 50,000 jobs for young people.
- A work programme to create 20,000 jobs for adults with dependent children.
- A wage-cost subsidy of 30 per cent for employers who take on, in addition to their normal intake, any person unemployed for three of the previous 12 months.
- A plan to scale down the number of skilled immigrants and to boost the number of apprentices in Australian industry by 20,000 a year.
- In addition, the Labour government will set up a manpower office charged with developing a comprehensive manpower policy.

The net cost of the party's proposals is estimated at A\$180m (£90m) in the first year, and around A\$350m in later years.

Primary staff call for a 24-hour week

COPENHAGEN — School teachers' actual class hours reduced from 24 to 22 per week, the Danish DUT has challenged the findings of a recent official survey which shows the average total working week of Danish primary school teachers at 23 hours and makes out that there is no case for a reduction in teaching hours at present.

The DUT, which wants primary

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Therefore, I would be interested to hear from teachers who do include timetabled complexities along as part of the normal curriculum and to ask, for example, materials used. This information will be used for a research project aimed at making low timetabled more intelligible.

DR LEWIS LUSLEY
Senior Lecturer in Training
Lusley, P. (1998) *Journal of Curriculum Studies*, 30(1), 1-15.

Science diary

What is to be done about research in British universities? We may know a little more when the joint working party of the University Grants Committee and the Advisory Board on the Research Councils, whose appointment has just been announced, reports. But that something needs to be done is by now abundantly clear. It is also plain that whatever remedies are suggested by the working party (whose chairman is Sir Alec Merrison, vice-chancellor of the University of Bristol), effective remedies will profoundly affect the relationships between universities and between the university system as a whole and the rest of society, the schools included.

The terms of reference of the working party are, superficially, narrow. The working party is to review the existing arrangements for the support of university research in the natural and social sciences, and to "consider" whether these make the most effective use of existing and likely future resources. Put more bluntly, the objective is to tell whether there really has been a collapse of what is called the "dual support system" by means of which university research is supported jointly by the research councils and the University Grants Committee. My own view is that the system has long since broken down, and that the quality and spirit of university research has already been seriously impaired. Moreover, if the present circumstances were by evil chance to persist for very long, calamity would result.

The theory of the dual support system is simple enough. Universities, the argument goes, are autonomous institutions with a responsibility for the teaching of students and the advancement of knowledge. The University Grants Committee is thus responsible not merely for supporting university teaching (which includes the education of postgraduate students) but also for providing the basic facilities which will enable university teachers to pursue their research. Many research projects which properly belong in an academic



A chemistry student at work in the laboratory. Arrangements for the support of university research are to be reviewed.

environment are, however, too large and costly to be supported in this way, for which reason the research councils are responsible for making grants to support specific research projects. The Science Research Council (the richest of the five) is almost exclusively concerned with supporting scientific research in the universities, increasingly by provid-

Needs for research: the breakdown of dual support

by John Maddox

log central facilities for research at publicly accessible laboratories. But all the research councils (medical, agricultural, natural environment and social sciences) quite properly have their fingers in the same pie. In principle, at least, the dual system of support has the advantage that it allows support for particular kinds of scientific research to be concentrated in the university where it may be most effectively carried on.

Not all the strains of the past few years have been financial, but lack of money has been the dominant factor in the breakdown of the dual support system. The Science Research Council (now more than £80 million a year) is plainly inadequate to ensure that all university laboratories are sufficiently well-equipped with up-to-date equipment for the academic concerned to be able to function efficiently. I know of several university laboratories whose share of their university's annual equipment grant is insufficient to pay for the cost of maintaining electron microscopes or computing machinery, and whose senior (and relatively well-paid) academics spend part of their research time as electronic technicians.

Funds for supporting research projects are also now inadequate to meet the potential demand. It is probably still true that really imaginative research proposals are at the end supported in one way or another, but there are very many teachers who have to make do with such research facilities as their universities have to offer. It would of course be ridiculous to suppose that every university scientist has a right to a research council grant, usually enabling the person to employ a research assistant or a technician, or to purchase expensive materials. But the now chronic shortage of funds has prematurely persuaded many academics to go slow on research, and to worry about their pensioning instead.

The most serious consequence of the present difficulties, while worse than the suddenly enforced sabbatical, is that the academic profession is being driven to look for ways of doing research in places without a full complement of scientific research

to build within their own university departments the small groups of committed people upon whom, in the last resort, effective research depends. It is no wonder that the morale of university research people has sharply declined. So how should the Merison working party set about tackling this problem? The simple solution would be to recommend that the funds available for research should be increased substantially. But that is neither compatible with the budgetary restraints which, in my opinion, properly are likely to persist for the foreseeable future, nor consistent with the university's need for its university research should be organized in such a way that such resources can be used effectively.

It is hard to avoid the conclusion that this will be possible only if it is accepted that not all university departments should be required to maintain research programmes on their own premises. It may even be that some universities should withdraw totally from house research.

The cry will go up from many academics that such a development would strike at the root of the principle that undergraduate teaching and research are inseparable. So I believe they are. But there is no reason why academic departments should cease to be scholars if they cannot potter about in a laboratory on the spot in between the first morning lecture and the coffee break. It would be an inconceivable loss for the world that among them to have to use research facilities elsewhere, at other universities or at publicly supported research establishments, but energetic people could keep their hands in by such means. The alternative is, in any case, even less palatable, that many science departments, or perhaps even some entire universities, should have to be closed altogether.

This is the point at which the problems of university research impinge on the other problems of the education system. If some university establishments are closed, then the places without a full complement of scientific research

on their own premises, scholars will have a vivid interest in seeking places at the more central institutions. Not all of them will succeed. In circumstances such as these, the interests of scientific research itself, that the most talented people should have a chance (if they wish) to try their luck, and of equity in the dealings of the university system as a whole, with its students, require that people should not be denied a chance to engage in scientific research simply because they have spent their time as undergraduates at what the Americans would call a liberal arts college. This the Merison working party will find, is where the rub comes. Its investigation will not be complete unless it includes a study of the way that undergraduates are selected for postgraduate courses, and of the way that universities are abandoned their own bright students by means of the quotas of graduate studentships awarded by university science departments to the research councils.

Some way of devising an equitable way of doing the job for the country as a whole, individual universities and university departments will welcome such a prospect. Predictably, the universities should become liberal arts colleges, when eventually they are identified with what is called an acceptable fate. What is needed is some device for making sure that they do not lose sight of the opportunity it could be given to the world that British institutions, staffed by scholars who concentrate on undergraduate teaching contribute powerfully to the richness and quality of higher education.

But plainly it is an issue that the Merison committee cannot hope to settle within its terms of reference. It is a way it seems to me inevitable that it will recommend a further step, there is in any long overdue a more searching enquiry into the "dual support" and organization of higher education, even if perhaps finally the Robbins report.

features

Finding a new public

In the second article in our pressure group series, Biddy Passmore reports on the changing role of the campaigning Advisory Centre for Education



The changing face of Where, 1963, 1973, 1978 and 1980.

"Do parents have any legal rights in the choice of state secondary education for their children?"

This cry for help, from a housewife in unavowed Kent, is typical of the letters flooding in to the Advisory Centre for Education, the "educational watchdog body". In a bewildering world of distant headmasters and even more distant officials, the centre is a friendly place to which parents can turn. It offers advice on an array of subjects—everything from choice of school to ways of removing an incompetent head to the cost of cancelling a school-leaving trip.

But the centre doesn't just have a passive role. It is a highly active pressure group as well. That's why its staff prefer the description "educational watchdog body" to "consumer association". It has a more positive ring. "The word 'consumer' implies passivity," says the centre's director, Peter Newell, "and parents aren't the basic consumers anyway."

In fact, ACE is the only independent group representing the users of the education service. Although it has no view of an ideal education service, it is working for a different approach. Our view are based on information and communication," says Peter Newell. "We believe that decisions should be made democratically, and not by some autocrat in county hall."

The centre was founded in 1960 by Michael Young (now Lord Young of Dartington) who, following the success of "Which?" and "The Consumer Association," thought he would apply the same approach to a social service. It started in Bethnal Green, moving shortly after its foundation to Cambridge, where Michael Young had a fellowship and cheap premises were to be found in Trumpington Street. In those early years, people joined by contributing 10p for four issues of the magazine *Where*, and paid a fee for advice.

The fee-paying element brought in a articulate, middle-class parent interested in a highly academic education for his public schools. Peter Newell says, "The sort of minority who will always make the most of the system anyway." We did all sorts of dreadful things in the past," Publications reflected the centre's clientele: *ACE Guide to Independent Schools*, *ACE Guide to Tutorial Colleges*, *Choosing a University*, *Choosing a Polytechnic*. But the centre was already experimenting with less traditional forms of education.

Peter Newell and his staff went people to make better use of the system, so they publish information sheets and guides, such as a best-selling handbook on school

It set up the National Extension College in Cambridge, forerunner of the Open University; started a cooperative nursery school; and established education advice shops in department stores and residential in-service courses for teachers. By 1977, however, the centre was in the dumps. "It was a very depressed period," says Peter Newell, who was about to take over. "We had accumulated a large deficit, the staff were very demoralised, and income from publications was tumbling down."

When the lease in Trumpington Street expired, the council decided to cut their losses and move back to London: much as it stuck in their throats to admit ACE was a national body and its place was in the capital. So with Peter Newell, then working at the White Lion Free School in Islington, as the new director, the centre moved back to the building in Bethnal Green where it had started life. The two remaining members of staff, one full-time and one part-time, moved down too.

Since then things have looked up considerably. There is now a full-time staff of 32, the deficit has been halved, and the future looks relatively secure. More important, ACE has established new priorities and found a new public.

When Peter Newell took over, he had a long hard look at the centre's activities, and decided it was duplicating effort in some areas and failing in others. Why, for instance, should ACE be giving advice on independent schools? "There were plenty of organisations around to do that already," notably IBIS (the Independent Schools Information Service). "And there was more than enough to be done in the mismanaged sector."

So that particular form of advice has stopped. In fact, all advice for fees has stopped. ACE decided that if they were going to reach those parents who really needed help, advice must be provided free. So all their income now comes from magazine sales, fund-raising events, and one-off grants from foundations like Quabank and Midfield, which finance their conferences.

In their new basement, where the slightest careless movement can send piles of paper cascading to the floor, ACE workers lead a busy, cooperative life. They run their office as they believe schools should be run: decisions are taken jointly, responsibility for all tasks is shared. Even the magazine is a cooperative effort.

Peter Newell and his staff went people to make better use of the system, so they publish information sheets and guides, such as a best-selling handbook on school

closures, *Schools Under Threat*. They answer at least a hundred phone calls and about the same number of letters every week—excluding straightforward requests for publications.

No attempt is made to give advice on a particular school or teacher. Instead, they send a general note of advice, and half to individual parents and groups. At one stage, circulation reached 15,000 to 20,000, but that was in the "bad old days" when it was little more than a guide to the public schools. The attempt to reach a new audience has meant a temporary reorientation, but it is now gaining ground again, helped by a new, expanded format.

The centre's postcard shows just how badly such information is needed. "Our letters and phone calls show that a great deal of information is being suppressed by the staff," comments sadly. "And our surveys of school records show that not a single head acknowledges that parents have a right of access to them."

ACE local authority surveys make them highly effective as a watchdog body. The centre sees them as vital of a time of eyes, when more and more local discretion is being given. Conducted twice a year, they elicit a good response, chief ACE workers report with some satisfaction—because chief education officers tell their officials to comply. They are backed up by "Where watchdogs", individuals who monitor local developments—mostly local ACE activists, college lecturers and interested parents.

The centre is a permanent and effective lobbyist of Government and Parliament. It has been a champion of the Taylor Report on School Government, bombardment MPs involved with recent legislation on the subject with press releases and information. The staff are also heavily involved in helping the new parents' governors, by whom there are already 12,000; after the new Act is fully implemented, they point out, there will be more like 50,000.

John Salts, a parent member of Taylor, has written a guide for parent governors—*The School in its Setting*. The centre is also helping, funds permitting, to produce a series of advice pamphlets, and to start a scheme of local training courses. Perhaps the topic uppermost in ACE's mind is disruptive units, the subject of a one-day conference in November.

One of the chief problems, they think, is the absence of any alternative to mainstream schools within the system. Children who are restless or troublesome tend to be shunted off to disruptive units. No attempt is made, they say, to develop local-level alternatives.

"We recognize that governmental models involving people in all decisions are not going to be generally adopted," they say, "but we believe they should exist." Earlier this year, they held a conference on alternative schools, and launched the Campaign for State-Supported Alternative Schools, which is now bringing in many letters of support. ACE is also against the segregation of the handicapped in special schools, and wants to see as many as possible integrated into "normal" schools. They set up a Coordinating Committee for Integration after a conference on handicapped children in November, 1978, and have been lobbying Ministers, Parliament, and local authorities ever since.

What does the future hold for this small but influential group of workers? More magazine sales, they hope, and a more effective monitoring service. But, above all, they want to move into a bigger building, more convenient and more accessible than their basement in Bethnal Green. With more space, they could establish a distribution network for their publications, have a "shopfront" into which people could wander, start up a library, and share adequate facilities with other pressure groups like CASE and STON (the Society of Teachers Opposed to Pupil Streaming).

To do this, they would need a substantial fund-raising fund. But they are not unduly pessimistic. They have managed to keep going in recent years without a penny of support from central government. There seems no reason why the well-informed and persistent voices should not win its case yet again.

centre is against the unit in principle, because the staff think it wrong to segregate children, and don't believe the existing units can be improved.

Most of the problems with children, are two schools' fault, they say—citing as evidence the fact that many parents are surprised to be told that their children—quite cooperative at home—are considered disruptive at school. At the very least, ACE would like to see the consent of both pupils and parents made compulsory before children are transferred to such units.

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The Advisory Centre for Education is at 18 Victoria Park Square, Bethnal Green, London E2 9PB. Tel: 01-980 4596. Newsweek magazine is at the Programme for the Study of Education (PRSE), 100, The Strand, London WC2R 0AL.

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Monday's Children

We asked children aged five to 11 to describe what they do on Monday, and what they would like to do. The 3,000 odd entries came in all shapes and sizes: some typed by devoted staff, some written out in "best" style as first written. We judged them entirely on content, not presentation.

Many entries, as we had expected, were straight description. They gave a fascinating picture of primary school work and life (see report last week). But they did not, as we had asked, offer judgments and suggestions. Some children wrote only about what they would like to do. The results were often well-written and

delightful but they did not fit the specifications.

Tim Francis did exactly what we had asked. In a witty and well-shaped piece of writing. The first prize of £30 goes to him, with a bonus of £150 to his school. It was harder to choose 10 runners-up, and we ended with a mixed group who all stood out in some way from their contemporaries: some for wit and elegance, some for evidence of serious thought, some for originality, some for down-to-earth balance. They will get £15.

We publish here a long extract from the winner, and short samples from the runners-up.



Tim Francis
Age 11
Marlborough Middle School,
Harrow,
Middlesex

Exploration Monday

Blust off at 6.55. The Thunder rams and we spring to our stations in the playground, ready for another exploration into the mysteries of learning. Another Monday, to Friday, only is under command, and meaning to say, the pea is still in the whistle.

One of the basic necessities on any exploration is the availability of food supplies, and this, first thing on a Monday, the staff have the arduous task of collecting and counting the dinner money, which does nothing to improve their temper.

Then comes assembly. All things bright and beautiful on a Monday morning, when the sky is overcast preloading a downpour and consequently no play-time.

Assembly over, the order of the day is maths; five, four, three, two, one, zero. This week's concern is tessellations. We learn that the tessellation of squares is too common and ordinary to mean with the teacher's approval. Something more obscure must be sought.

We progress to more original and complex designs but our flights of fancy are curbed by work from "Top Ten Mental". Whatever happened to the bottom and middle 10? After a stiff bout of calculations, we are released for the best event of Monday morning: Playtime flashers by and music. It is upon us in no time at all. The teacher is temperamental because of Monday morning, but unfortunately the tape recorder never is. Since school began it has never had a single day's illness to my knowledge. When not playing, it would seem that it is perpetually recording to regurgitate the broadcast singing Teacher. The teacher and the tape recorder, take up for half a lesson each. I prefer the teacher, because the tape recorder is

unable to grow about taking our backs as the teacher does when the tape recorder is in operation.

After the necessary retelling of staff and pupils we begin the afternoon, the lost store of Monday education, with Topic Work. For me, Topic Work means converting chunks of books into my own words and copying the accompanying pictures. Usually it seems that quantity will make up for lack of quality but not vice versa. Suddenly the bell rings. Chairs fly up and books are hastily crammed away.

"Er now class," the teacher mumbles, "Your homework tonight is..." but he stops in mid-sentence. The classroom is empty. Another Monday is over.

As I am walking home, I put Monday to rights. Administer of education, T. Francis lays down the law. I plan the sort of day I would really like. To start with, a time for writing about something that is of special interest to me, or a time in which I could draw or paint, make a model, or write a story, to make a less abrupt start to the school week.

I would like to work harder for a shorter time in mathematics, I would like more problems involving calculations, and some good, mind-bending exercises, such as you find in puzzle books.

In music I would leave the tape recorder on the shelf for a much needed holiday and I would try and let the children see some orchestral instruments and their players. I would let them listen to Beethoven, and Scott Joplin, Mozart and Gilbert and Sullivan.

Topic Work would be based on first-hand experience. Children would go on voyages of exploration, round the park along the street. It would not be necessary to go far for the children to learn to look at things with fresh eyes, but never mind about T. Francis, Administer of Education. Better things are to come, tomorrow is Tuesday.



Kirsten Williamson
Age 11
Compton Primary School,
Oxgangs Green,
Edinburgh

Our school, which is meant to hold 300, is at the moment holding about 350, while the one beside us which can hold many more is holding fewer. I think that if both the schools changed buildings it might help.

We usually start our morning with a horrible "thing" known as Top Ten Mental. You are meant to do the exercises in your head and most of our class find it nearly impossible. They have questions like this: "A garden has a length of 31m and width of 27m. In the centre there is grass and a rose border around it. The grass is 17m by 14m. What is the area of the rose border?"

If they expect us to do that in our heads they must be crazy. Actually we make notes on scraps of paper or on the back of our mental lotters. We then get mathematics (maths) for which we use four books: Modern Comprehension Arithmetic 4 and Modern Comprehension Arithmetic 5, and Making Sure of Maths 4 and Making Sure of Maths 5.

Making Sure of Maths is quite interesting as it has puzzles, things to make, and pictures, whereas Modern Comprehension Arithmetic has not any pictures, not many puzzles, and hardly anything to make. The playground is not very big and in the winter we are not allowed on the grass. We have one brilliant thing that I am sure not many schools have, and that is a wood. It is not very big, I mean it has only got about 10 trees and five stumps, but that is enough.

We then go back to something not exactly boring and not exactly brilliant, music in our music lessons nearly every day. I mean it is not really surprising as we sing things like "The White Cliffs of Dover" and "Ye Banks and Braes". Why don't we sing things like "The Alphabet Brick in the Wall" or "Message in a Bottle"? People might not fall asleep then.



Nicholas Smith
Age 7
St Mary's School,
Wheaton Aston,
Stafford

Soon after the bell rings I line up for assembly. Then I go into my classroom

and I do five-a-day maths. After that I do more maths. After that I go into the playground. The bell rings and I go into my classroom and watch television for half an hour. At 11.30 we talk about the pictures that were on television. And then we do English.

On Monday I would like to go into the hall and have assembly for 20 minutes and after 20 minutes I would like to go into a pottery room and have pottery lessons and that would take a long time. After that I would go across the road to a studio. There I would paint the pot that I have made and then I go back into my classroom and have a good time on English workbook.

After dinner I would like to go into the playground with my teacher. My teacher will open a big gate with a big key, and then she'll open a little house with a lot of woodwork tables and I would like to do woodwork for an hour. Then I would like my teacher to give me a big piece of sugar paper with all sorts of paper sums on it and I would make a maths book.



Daniel Hayes
Age 10
Harris Middle School,
Lowestoft,
Suffolk

This is a typical Monday. Harris Middle School-style. A double period of Practical: break; Maths; Music; English; Lunch; French; a double period for Integrated Studies.

Practical: This is a subject I, and a lot of other pupils, enjoy. It is Art, Ceramics, CDT (Craft, Design and Technology), Cooking and Craft in one word. I think Art is a very useful subject because it provides an outlet and it proves to be a very interesting and individual subject for a child to express his/her thoughts.

Music: This is a subject which I don't think should be taught on untrained children like myself unless they consent to do it.

In this subject I think more should be done in the way of creative writing. One thing I despise in English is comprehension sign and work out of books where all you have to do is answer questions, because it is so refined into a waffle length of yes and no, right and wrong.

French: I think French is an interesting subject. One thing that I think should be done more often is word games in French. On the subject of tapes I think they should only be used occasionally, because the voices often mumble and it is even more distorted if a bad tape-recorder is used.

What is missing? The main thing I think is missing from schools catering for my age group is debates and discussions.

A part of the day should be spent in formal education, but the other part of the day should be spent developing the child's own interest so that he can do his own piece of school work. Because in a class you get as many interests as pupils in a classroom. You may get interested

Following last week's report on our 'What I do on Monday' competition, we publish this week extracts from the winning entry, and those of the runners-up

varied as old Lowestoft or genetic engineering.

In science I think a basic knowledge of the mensals should be acquired, then the teacher should set the class a problem and small groups work it out using their own ideas.



Dominic Porter
Age 10
Peterston Super Ely Primary School,
South Glamorgan

School on a Monday morning, chaos in the house, into the car then through the school gates.

"Hi, Dad, wanna game of soccer?" "OK, which way am I kicking?" "Against Rees, we're winning!" "Cricket, Field, watch the pushing."

I usually play soccer before registration, then we go into lines. Into school and formal maths is first (worse luck). After that it is out to play; we are never allowed on the pitch first play but usually find something to do. After play we have got Primary English. That is dinner time, I have sandwiches, not looking forward to Beta but it has to be done. After Beta we have another break, then it is games.

I would prefer to do more up-to-date work, for instance, learn about computers much more work with terminals. I think we should have a chance to think of new, suaver courses. I am sure we are just as good as Einstein! We should be taught early how to do adult's jobs. After all, the world's children are its future.



Sacha Baron Cohen
Age 8
The Haberdashiers' Aske's School,
Elstree,
Herts

I go to school of my own free choice. My parents told me there is a law that little boys must go to school. But I am allowed to choose myself whether I go to school or prison. I have chosen to go to school, to know how to swim.

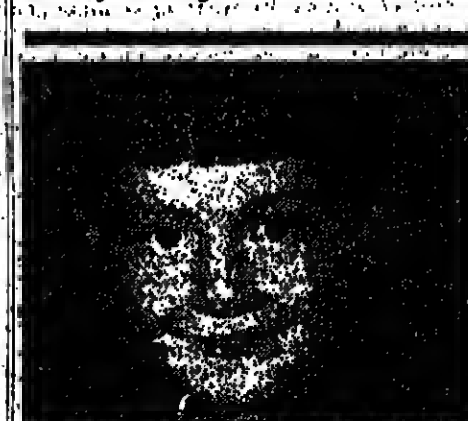
Sometimes, on a Monday morning, with five long days till next weekend, I sometimes wonder if I went to the wrong place by mistake.

Now school is a wonderful thing, as everybody knows. It is tremendously good for teachers, and headmasters simply cannot do without them. I am lucky to go to a good school. We learn many useful things that will help to make us better people when we grow up. In history, I learn for instance how the Stone Age people survived. This will help us through many bad English winters and strikes.

My first lesson on Monday morning is English. This reminds us of the correct way to speak and write English. This is very important as most of the boys have been watching television and speaking with their parents all weekend. By the end of one English lesson, things, especially our English, are more or less back to normal.

Our second lesson on Monday is maths. Maths is my favourite subject. In maths it is a great comfort every Monday morning that one-plus-one still equals two. All sorts of things may have happened over the weekend. Russia may have invaded Afghanistan. England may have lost against the West Indies at cricket, and the price of Smurries has jumped 5p. But in our maths lesson nothing has changed. One-plus-one still equals two. There are sometimes problems over vulgar fractions, and about exactly where the decimal point has to go. But at the whole, after Monday morning's maths lesson, the world does seem a bit more reliable and less insane than it did on Sunday night.

If I had to change something I would make everybody go to school to learn again. That would make the world a better place, especially if teachers had to come back to school to learn again what it was like to be a schoolboy on Monday morning.



Ben Tunstall
Age 7
Blakeney Primary School,
Wimbledon

On Monday we have our new spellings and do diary. I do not like one of those things therefore I have thought up some of my own. I am interested in design, so I have designed a Christmas pudding machine. I think that my class could do it because it is not too difficult for us.

We would sell the Christmas puddings to raise money for our library project. What I think we should do to get the things we need is a class outing to the dump.

A list of the things we need to make it. An old water tank, pipes, egg wheels, some buckets, etc. If the things were very dirty we would clean them up.

An extremely detailed description, with working diagrams, followed by instructions: "Mixer. We would cut holes in a lid of a plastic box and put four egg wheels in it. Then two long pipes would be fixed in to two egg wheels. Then we would put two forks fixed into the pipe. On the egg wheels are two knobs and the shoe laces go round them. We pull hard on them and the egg wheels go round so the fork goes round."



Heather Taylor
Age 10
Hey with Zion Primary School,
Oldham

Perhaps I had better explain about my school building before I go any further. Just over a year ago we moved from an old church school where water was always pouring in through holes in the roof if it rained hard. We could have no indoor gym lessons because the infants used the hall as their classroom. Therefore, I thought that I would like everything about my new school.

There are however a few things which I really hate about it. On Monday morning I would like to hang my coat and things on a proper hook but instead I have to fight my way through a lot of other boys and girls who are trying to put their things on to a small trolley where the coats are always falling off the funny hooks and my shoes never stay on the shelf underneath the coats. At playtime I have to play hunt the shoe, as mine is usually buried under heaps of others. Then I go to my tray for my books. This is only small and books get stuck and bent. How I would love my old desk back! It had plenty of room and was always neat and tidy.

I love art and craft but this can only be done in a small group as the art area only holds eight people at a time. It is no fun painting when all the time we have to watch we do not spill on the carpet. In our old classrooms we always used to finish with a story but here we only have a story if the staffroom is empty. Open-plan has made things difficult for us. The only answer is to start building walls and cloakrooms. They would be lovely.



Ben Tunstall
Age 7
Blakeney Primary School,
Wimbledon

On Monday we have our new spellings and do diary. I do not like one of those things therefore I have thought up some of my own. I am interested in design, so I have designed a Christmas pudding machine. I think that my class could do it because it is not too difficult for us.

We would sell the Christmas puddings to raise money for our library project. What I think we should do to get the things we need is a class outing to the dump.

A list of the things we need to make it. An old water tank, pipes, egg wheels, some buckets, etc. If the things were very dirty we would clean them up.

An extremely detailed description, with working diagrams, followed by instructions: "Mixer. We would cut holes in a lid of a plastic box and put four egg wheels in it. Then two long pipes would be fixed in to two egg wheels. Then we would put two forks fixed into the pipe. On the egg wheels are two knobs and the shoe laces go round them. We pull hard on them and the egg wheels go round so the fork goes round."

What I think my class would like to do is to build a machine. I think that we would enjoy fixing and working it because it is the sort of thing people like to do. I think

it will be interesting fun and nice to see and do.

What we do that is boring! Springboard. In springboard there is a sentence with missing words in it and the words have two letters like fr or something like that. I do not like that sort of thing at all.

What I think is missing. What I want us to do is make machines, write more stories, draw and go on outings!



Saul Billingsley
Age 8
Silloth Primary School,
Carlisle,
Cumbria

We sit down to read. I do not like the reading books we have. Most of them are old and tattered. Also they are very easy. This means the good readers run out of books to read. Now we do our English. I do not like the kind of English we do. Our books are boring. I would like a book where you have to write poems and plays to act. Also the teacher goes through the exercises with us, so we do not have any use for our brains.

At assembly time everyone has to line up in the corridors because we have no hall. It is noisy or assembly time because the corridor doesn't carry the voice of the person speaking.

I wish we had a hall so we could be comfortable in assembly and so we could do plays and proper concerts.

I love history and I think by the time you are eight you should do it regularly. In our class we did work on Covenants and that was the first history we had done for weeks.

When we do painting we haven't got any room to do it. There is a small side shelf but otherwise we have to do it on the floor. I wish we had some space in our school.



Most schools learn maths in maths lessons and English in English lessons. At Chivenor Primary School, however, we have a new and interesting way of working.

We do not start our day like most classes do with a maths lesson and then at 10 o'clock change over to an English lesson. In the morning we might learn about rainbows. We will all have our own work and might write about rainbows and how they are made or learn about angles of reflection and light or draw or sew a picture of a rainbow.

All of the work that we do is about things we have seen and done or studied and enjoyed, and I find this very interesting because if you go out of school and actually see something, it is easier to write about it than if you are guessing or using books.

My maths and reading is blending in with all our other work and it is about things that make sense. If you are interested in something you find out more about it. I think our class is getting very interested in the world and learning how to look after it. We learn how to think for ourselves.

review

Higher Education Revisited. By Lord Robbins. Macmillan £12.00. 331 28600 5.
Higher Education for the Future. By Charles Carter. Basil Blackwell £7.50. 631 11331 2.
Process and Structure in Higher Education. By Tony Becher and Maurice Kogan. Heinemann £12.50. 435 82507 0.

Two of these books are readable. The third hardly is, except perhaps by colleagues trained in the same tortured mode of expression. The two readable books are by writers with long experience in higher education, but both condemn by discipline and with no obligation, except their deep concern, to write about higher education. The third work is by a professor of education and a professor of government and social administration whose chairs carry with them the duty of informing and enlightening their students and the interested public about such matters. Both use of good repute, educationists whom I respect (though my personal acquaintance with them has been slight) and to whom I would not wish to be unkind. But the contrast between the way that they, as professionals, conceive that they should study and write about their subject and the way the two distinguished laymen do so is as sharp as I must emphasise it even though the leaves rather little space to consider the content of the books. What happens to higher education in this country will turn not only on what academics want but on governments and public opinion; and the way those who should advise as in fact committees their views is of great significance, and of significance that goes beyond these three books.

Lord Robbins says in his introduction that he has found most modern books he has read on education rather heavy going. He had better not try the third of these three. I can only say for myself that after getting through four chapters I had to stop and listen to Anne Mozart to relieve my frustration and recover my delight in lucidity. Something really has gone wrong if, I hope, Tony Becher and Maurice Kogan will not construe my criticisms as a personal attack but will ask themselves seriously if the supposedly academic method of writing do not create a quite unnecessary barrier between what they have to say and their would-be readers. The contrast between their style and that of Lord Robbins and Sir Charles Carter who write in the three books and who will be the first thing that strikes anyone who reads the three books and who unfortunately for Becher and Kogan, so far as they are concerned, it may be the last also. Let us look at the books in turn.

Lord Robbins uses the device of letters in an imaginary correspondence who asks him how he feels about higher education—17 years after the publication of the Report that is regularly known by his name. This precludes lengthy systematic treatment and permits an informal tone; and this is what he wants, for he has no wish to go over the whole ground of the Report again in its own systematic style. He handles the device really. Many people have wondered how he thinks about these things now. Here, expressing his attitudes in a friendly, questioning, are his replies.

There is always a tendency to suppose that with the passage of time once a prescriptive view must be out of date, and not to distinguish between underlying principles and the accidents of circumstance that of course make conditions necessary. So with the Robbins Report. The Committee's forecast of the number of young people who might have university entrance requirements proved too low; but it was forgotten that the Committee deliberately chose the lowest

Minds on higher matters

by
Lionel Elvin

of three possible estimates lest those who distrusted expansion might be even more vociferous. Again, the connection between higher education and economic development was too narrowly construed, but the general connection can hardly be disputed. The Committee was too hopeful about the use of manpower planning, though Lord Robbins himself never was. I was one of the sinners here, and I now fully accept Lord Robbins' doubts.

Some criticisms are still off the point. Sir Charles Carter thinks the Committee should have paid more attention to the curriculum of studies, but forgets that the Committee's terms of reference asked it to report on the "pattern" of higher education, which clearly implies its structure, more than anything else. We were not competent to go into details, subject by subject (e.g. medical education). We discussed how far we could go and decided that only general observations would be right (e.g. about what we felt to be the excessive reliance on very specialised degrees). But the basic principles, stated in the first chapter of the Report, are well supported. Lord Robbins does not think so. To those who would say that the general principle that those who are qualified and willing to study in higher education should be enabled to do so is right enough but that we cannot afford it now, he replies that the way the demographic curve is going will lead to a fall in numbers in the 1990s. He is somewhat—but not excessively—prejudiced that the decline in numbers in that decade might be too great. Meanwhile the bulge of the 1980s can surely be handled.

Sir Charles Carter's book is a series of short chapters on the main problems of higher education. It is somewhat more systematic than Lord Robbins' letters but is not a treatise, being intended to be simply a thoughtful contribution to the discussion about the future of higher education. The style is always clear and is occasionally enlivened by a sharp phrase. Carter accepts no fashion without asking why, and comes to his own conclusions. I do not agree with all his suggestions. For instance he would overcome the often unreasonable conservatism of academics about the curriculum by putting laymen on the committees that

lowering of the staff-student ratio by a few points and a more critical look at some research proposals need not be catastrophic. On the central principle, that of access to higher education, Lord Robbins is firm. And surely he is right.

He is also firm on some important subsidiary matters. Perhaps firmer than he feels he was, for instance, on the feasibility of student loans as a partial alternative to outright grants. He greatly regrets the failure to accept the Committee's proposals for federating the colleges of education with the universities. He considers this one of the best recommendations in the Report and pays fitting tribute to Sir Philip Morris who led our thinking on it. Incidentally, one of the few moments when Professors Becher and Kogan slip into effective vernacular is when they describe as a badly botched-up job the way the necessary reduction of numbers of teachers in training was actually carried out. How right on this both books are!

There is more careful and effective analysis of the meanings of the term "research" in a few pages of Carter than in this book with its "model". And he does it with right policies in mind, to test the too simple assertion that research and teaching should always go together. A poor, said Wordsworth, should be a man speaking to men. Writing on education should be no less.

decide such things. I think there are few laymen who would feel they had enough professional knowledge to be effective at that level. My own suggestion would be to have "externals" on such committees (as we do for university examinations), academic people from the same field but from institutions where they may do things differently. Nor am I sure that two year colleges, to take those who want higher education but some of whom do not want or are not good enough to take a degree, would work as well here as they certainly do in the United States. In a system where a first degree takes four years a two-year course is both a good halfway house for some and a reasonable terminal point for others. But if you have done two out of three years (as it would be here) you are almost bound to want to go on and get the full award. But with many others of Carter's suggestions I would agree, and they are all worth consideration. They can be considered because they are put forward clearly.

Now the third book, by Becher and Kogan, does have some good things in it. For instance, they emphasise the subtlety but strength of the tension between the feeling academics have as to their proper nature and functions and the constraints that come from central agencies or the conditions in which they have to do their work. Further development of such points, with more neutral examples by way of illustration, would have given us a worthwhile book. But it is all spoiled by their bad writing and, as it seems to me, their misconceived method. The writing is not so much disguised by jargon as incurably "thick". The very title seems like a translation from some German. Some passages are almost acceptably written and one wonders whether one of the authors—I do not know which—can write acceptably and has been infected by the other. But the prevailing style is like this sentence: "The functions implied in the normative mode of the central authorities are evaluative and judgemental; those in the operational mode are concerned with allocating resources and sanctioning new developments". A surfeit of that and the reader just gives up.

The more tiresome stultification, however, is the rigging-up of a so-called "model" within which their discussion of higher education is to take place. Now forgetting the studies and activities where a model may be useful and coming with a fresh mind to use here, what does it amount to? The authors want to establish categories of functions discharged by different kinds of agency or institution in higher education, each of which may have more than one "mode". You do this by giving each category functioning in one mode, a little box. These are called "cells". They put all the little boxes in a rectangle and call this your "matrix". This really is erecting scaffolding to build a mousetrap.

The authors single out four levels in higher education: the central one (government and its agencies), institutions (e.g. the university or college), the basic unit (the department or research team) and the individual (student or teacher). Each has its conception of what it should be and do, and its working conditions. This can be said more directly. With words instead of a rigid geometrical pattern it would be easier to allow for the great variety of institutions and names for them that are in the real scene.

There is more careful and effective analysis of the meanings of the term "research" in a few pages of Carter than in this book with its "model". And he does it with right policies in mind, to test the too simple assertion that research and teaching should always go together. A poor, said Wordsworth, should be a man speaking to men. Writing on education should be no less.

community school with values clarification's educational programmes.

Let me do the test. The passage says that an experiment in teaching morals had an unbreakable effect for the very first time. The improvement was not achieved by imposing accepted social values but by eliciting and clarifying principles in a school which itself embodied them.

Whoever wrote this passage cited it as a masterpiece of redundancy: the expense of meaning.

Spurious entities

ling in a waste of words. He can not refer to an effect without calling it meaningful. He can not mention a classroom without a neo-linguistic inflation into "classroom situation". But what does the inflation add? Unfortunately he is not alone. One of our weekly reviews recently referred to a "homosexual marriage situation". Where is the subtle increment of meaning? And why do we not refer to a heterosexual adultery situation? (Perhaps we do.)

Despite the excellent critical work set in

motion by *Private Eye*, you still run into situations everywhere: conflict situation, confrontation situation, work situation, performance situation, therapy situation, learning situation. Situations occur not in order to expand meaning but to convey meaning in clinical language. It is the lingo of the white-coated worker, sometimes harmless, but always proliferating dangerously: worship situation, love situation, eating situation, mortality situation, living situation. Those who freely create situations are really claiming to belong to a coded-off universe of cognition where they themselves move expertly, clinically, knowingly. The word "situation" tells you who speaks not what is.

But the most dangerous inflation in the passage at the beginning is found in some thing I find very difficult to give a name. So I will indicate by examples: dominant values patterns acquisition, teacher instructional behaviour values clarification's educational programme. I could call this sort of thing the expanded nominative, or I could exclaim against the creation of spurious entities. Words are piled together and erected into imposing heaps. The act of teaching becomes teacher

instructional behaviour just as the act of learning could become student positive reactive orientation. You and I are no longer in there doing things, let alone misdoing. We have been drained away into an agglomerate of words, a spurious entity, reduced to a type of "situation".

Moreover, these hygienic, expanded entities, which try to speak so loudly of the scientific, analytic approach, also covertly convey their evaluations. The cool gloss of the lengthened noun hides the adjective, with the boss and chief, companion, boss, instructor? No. Indiscriminate? No. Now you can condemn something in the very act of saying it and of characterizing it scientifically. We salivate; approvingly as the appropriate bell.

All this, of course, is abstract, imposing, mystifying, and *indeed*, is designed to show how we may become clear about morality. It is part of a moral education programme, and the word programme should tell you all you need to know. Did ever goodness wear a smiling face, or more clearly hide behind such mystification?

Some back Scrutiny! It is forgotten.

David Martin

Rays of Sunlight

Michael Clarke at the Leverhulme exhibition

Lord Leverhulme: A Great Edwardian Collector and Builder. Royal Academy of Arts, Piccadilly, until May 25.

The Royal Academy is not yet being severely threatened as some arts institutions and organizations but it has in recent years had to turn increasingly to the commercial world for sponsorship. The Lord Leverhulme exhibition, currently on show in the Fine Rooms at Burlington House, is, therefore, something of a propaganda appeal.

William Hesketh Lever, the first Lord Leverhulme, was himself a patron and sponsor of the arts and Unilever, in which Leverhulme's diverse business interests were absorbed, is sponsoring this exhibition. It quite clearly aims to celebrate more than the Golden Jubilee of the founding of Unilever. Leverhulme not only patronized artists and art institutions, he created, at Port Sunlight and to lesser extent in other places, whole communities, factories, houses, schools, libraries, galleries and other public amenities. Benevolent despots like him do not exist any more but big commercial empires do. The Lord Leverhulme exhibition offers an example of patronage on a grand scale which current big-business enterprises would do well to imitate.

There is not much to be gained now by criticising Leverhulme personally. A non-conformist, autocratic man, he was a Gladstonian Liberal and a fervent believer in Free-Trade. He also possessed contradictory motives. Attached to self-interest himself he was unprepared to recognize it in his employees and when he extended



Lord Leverhulme and Pert Sunlight Sunday School children, 1911.

profit-sharing to them it was in the form of provision for their housing and recreation rather than in direct cash.

Leverhulme had begun buying pictures in his early twenties but it was only when he founded his soap factory in 1886 that his serious collecting really began and this was for the specific purpose of over-riding. He deliberately chose well-established painters whose work would be immediately recognized when it appeared on the hoardings.

The conservative taste these reveal was obviously part of the man and although he was one of the first of his generation to collect eighteenth-century English art there is nothing in the Royal Academy's selection of the best collection itself that radically departs from the typical, eclectic outlook of late Victorian and Edwardian taste. For what is most original in his past is straight-forward, utilitarian, rows. What distinguished Port Sunlight from the beginning was the setting of varied housing, along with diverse community buildings and activities, in a park-like landscape. It was one of the earliest and best examples of wide-scale social planning along garden-city lines.

Political men and machines

Norman Stone on a week's television

In the 1890s Bismarck would sometimes try to ride back into power in the manner of El Cid (he on his own corpse) and it says much for Messrs Carter and Reagan that when Richard Nixon attempts a similar feat, he might be taken seriously. I was one of very few people who refused to get worked up about Watergate and was not at all disposed to curl up my lip when I saw him on The Book Programme (BBC2) on Sunday night, discussing his work on international affairs with a team that included A. J. P. Taylor, Sir John Hackett, and Philip Windsor of the LSE.

I do not like kicking a man when he is down, but duty calls. Nixon was frightful. The eyes flickered back and forth like the proverbial used-car salesman. He rather embarrassingly succeeded in showing the Russians lying and cheating. He seemed to think we would all accept his word for it that Suslov, Brezhnev et al are war-mongers, because he had actually talked to them. The discussion was first fully polite, and when A. J. P. Taylor made his usual economical and telling comments, he earned an "I studied history and have great respect for Nixon" remark from that Martin language that Americans in authority will use: in the

1980s the Soviet Union "will be in a negative position with regard to oil". Sir John Hackett very ably exposed the evidence of Soviet will-to-aggress, but I rather agreed with Mr Taylor's point that when we have weapons, they are a shield, and when the Russians have them, they are a sword. No one mentioned that in Moscow's view, large ornaments are needed, not just to deal with the west, but to cover China.

Islam once more occupied the news, what with the American Embassy occupation in London. How well the student demonstrators have behaved (there could have been many more of them) and how very agreeable if we could simply exclude the Iranians from this country. Everyone knows that it would solve the harpino problem overnight. On Sunday night (BBC 2) The Heart of the Matter endeavoured to show what Islam was about. A fortnight ago, The Times had an interesting centrepiece on the theology of Islam; this programme might have extended the story. But again there was a disappointment. Women in headscarves explained or laughed, why they were headscarves. A person from some religious group said that Islam had to do with Brotherly Love, Truth and Obedience with God. It all

Artistic scrap-book

John Spurling

Late Antique, Early Christian and Medieval Art. By Meyer Schapiro. Chatto and Windus £20.00. 7011 2514 4.

The three volumes of Meyer Schapiro's selected papers have been published in an odd order: first *Romanticism*, then *Modern Art*, and now art of the period from the end of Classical Antiquity to the beginning of the Renaissance. This reason is not far to seek. The book begins promisingly enough with a discussion of the mosaicist and his box on which Joseph the carpenter is working in one of the fifth-century Mosaic Altarpieces. Professor Schapiro cites St Augustine:

The devil exulted when Christ died, but by this very death of Christ the devil was vanquished, as if he had swallowed the bait in the mousetrap. He rejoiced in Christ's death, like a bailliff of death. What he rejoiced in was then his own undoing. The cross of the Lord was the devil's mousetrap; the bait by which he was caught was the Lord's death.

The trap, then, is both a religious symbol and one element in a domestic still-life, but it also suggests (since the mouse was an exotic symbol) a sexual meaning: temptation, chastity and the mysterious relationship between Joseph and his pregnant, virgin bride. The essay winds up by invoking Van Eyck's Arnolfini wedding-portrait and the fantasies of Bosch.

The virtues of this opening paper (published in 1945) are those of Schapiro at his best: an exceptional curiosity and eye for small detail, combined with an immense spread of literary, artistic and historical knowledge, so as almost to open up a work of art and the context in which it was made.

Unfortunately, there are only one or two other papers which sustain this level of detective-cum-socio-

logical interest: most untidily, norlops, "The Image of the Disappearing Christ", from which we learn that the Anglo-Saxons of the first millennium invented a subjective, episode-by-episode view of the Ascension, only Christ's feet being visible at the top of the picture. Too much of the material is taken up with the confutation of previous scholars' arguments. We welcome right to assign very few of Castelsapiano to the tenth century? Schapiro thinks not and tentatively (after 63 pages of text and 12 of notes) prefers the eighth.

Another art-historical ignis fatuus is the problem of attribution. Schapiro lacks professional horns with one Clifford Mees over an Italian *Flagellation* acquired by the Frick Collection in 1951 and attributed by Mees to Duccio. The outcome of the tussle turns in some part on the position of the left arm of the figure, which Mees considers "the most astonishing aspect" of the painting. No, says Schapiro, it is not all that astonishing and the piece is not good enough to be by Duccio. Nevertheless, less he is not primarily concerned with who painted the picture but with the criteria for judging its quality, especially its originality in the context of its time and of known works by Duccio and Cimabue. In the event it seems a pity that his sharp eye and formidable learning should not have been brought to bear on the decided work of one of the masters themselves instead of a mere follower. On the other hand, when he does treat a work of outstanding quality, the *Beatus Apocalypsis* of Gerson, his essay is too short and quite inadequately illustrated. The black-and-white plates which serve well for papers dealing mainly with historically or symbolically relevant details are almost more of a hindrance than a help to the understanding of paintings, which Schapiro himself describes as "an art of colour bound to a visionary text".

The fact is that this book is a scrappy collection of odds and ends, covering for too large a field. It will no doubt have its uses as a work of reference, but for more reading, like "The Image of the Disappearing Christ", it lacks body. It is off feet.

CUE theatre magazine

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Charles Fox on jazz pianists

Why, then, did he go from jazz piano playing to the circumscribed poet setting up much more complicated rhythms and patterns. His influence on other pianists was immense, even more than that of Duke Ellington, and he inspired P. Johnson and Erico Walker. One pianist who had succumbed to it by



the plemnas being flanked by bass and drums—his retirement, his style to suit. The role of the left hand was severely functional, just marking the chords, while the right hand fashioned single-note lines, rather like those played on the piano for guitarists. The music was very simple, partly because he took aesthetic risks, partly because of his mental and physical unsuitability (he died in 1966, aged only 41). In later years his performances sounded bugily. He was brought to the form at a Stockholm concert in 1962, on an occasion now enshrined on The Bud Powell Trio at the Golden Circle, Vol. 3 (Steeple Chase Classics SCC 6009). The approach was vigorous, over-energetic, comprised of a few simple and direct lineal inventions and seriousness

are these — especially in Powell's marchon solo on "Swedish Peasants." The five-year-old chews witely out any loss of tension.

Art Tatum's counterpart in our own time, the pianist whose technique bowls over all his fellow professionals, is Oscar Peterson. You can't call him a virtuoso, indulging in it as he kills time, because he feels no swing. But, on a recent LP, Night Child (Pablo Today DL 956), Peterson, with a group that included the guitarist Joe Pass, focused up to a new class of virtuosity. On every track except one, he used an electric piano, and his instrument, like his virtuosic, but also precise, performer's identity, destroying subtleties of touch and timing. Peterson shows his class by sounding, purely like himself.

Aristi from

been a largely masculine music. Yet there were always at least a handful of women instrumentalists, mostly pianists. Outstanding among them in the thirties was Mary Lou Williams, playing with Andy Kirk's Clouds of Joy but also writing arrangements for Benny Goodman's band. During the forties and fifties her style expanded to embrace new harmonic ideas, yet the real strength of Solo Recital at the Montreux Jazz Festival, 1978 (Pablo Live Deluxa • 2308 218)—Miss Williams was 68 at the time—lies in her approach to the blues-based numbers rather than the standards (including the Monk, Lee and Lee or the slightly top-potted history of jazz piano playing.

British pianista come in different guises. Eddie Thompson (Arista, AS Sweet, Hep 202) and Tony Lee (Street Of Dreams, Lee Lambert, AAM 102) lead their respective trios through variations on familiar themes, but Thompson's rhythm when he might be called the classic trio (Lee shows particular fondness for Erroll Garner's trick of apparently delaying the beat). But Stan Tracey is the Old Adversary. Stiam (SJA 107) has a more sophisticated approach, imposing it on everything but dancing, whether playing his own catchy, often witty compositions ("Once A Jolly Jobsworth," for instance) or, often, improvising from scratch. (Arista, AS Tracey 101) Tracey's music lies in "For Eddie K.," dedicated to Duke Ellington). Another, clearly solo LP is Chris McGregor's *Black Blood Time* (Oguni OG 52), which is a real gem. It has a fusion: an early classical guitar, throwaway, and a real sense of humor, as aware of happenings in jazz from the earliest to the most modern, and the experience of growing up in South Africa, and leading a band of South African and white African musicians. A more profound and bow long it is, since being a good jazz pianist also involved holding

The Prerogative of the Harlot: Press Barons and Power. By Hugh Cullipp.

Industrial civilisation has now evolved any form of power more agreeable to the holder than that which arises from ownership or control of the instruments of mass information. It is for less constricting in its television mould than one of the old forms of power, especially in the case of a press baron than a general; it is less risky to found a newspaper empire than to indulge in a military career. In any other branch of capitalism the sensation of potency in the conquests of the media is far purer than in the conquests of the factory, enjoyed by those who move into elective politics.

The media provide their supreme flattery, or have done so, at least for the (first) three quarters of this century—with that engular combination of paternalism and intimidation enjoyed otherwise only by the monarch. They have offered the opportunity to preach without the obligation of consistency, to play alternate sides of the board, to both *embrace* and *graze* and publicize the economic and political system on throne but with the ever present opportunity to rush toward the sound of incipient applause. The first generation of politicians to face the modern mass electorate were nervous about it, they felt that they seemed to hang over a great part of their function to a cline of intermediaries whose boast it was that they, and not the electorate, were the link between the state with the mass mind. Thus, through out Europe and North America, an elite of press owners, radio and television debate holders, cinema managers and newspaper editors, and broadcasting promoters have exercised a tremendous and relatively under-scrutinized power in the



these figures. He has wisely chosen not to provide a general biography of any of them but to restrict himself to a couple of episodes in each career which throw light upon the personality as a whole. His title is taken from Baldwin's much abused remark about the "Beaverbrook for" exercising power without responsibility—the prerogative of the harlot throughout this age"; but the book leaves one wondering whether these five men were really leading the life of a "Beaverbrook" or were only posing as such, a bogu on temporary l'oiseau between politicians and client publics. Certainly these gentlemen all remained at the height of their prestige only so long as they were content with influence.

Continuation. Not since Mussolini has an out-and-out newspaper monopolist sought power directly for himself outside the legitimate context of constitutional activity and not since Rothemberg has any major newspaper published in Britain or America encouraged any individual to bypass the established political system.

system here, of course been the stream of studies published in recent years about all of the figures in this volume, including one work (Taylor on Boerboek) of considerable scholarly merit. The *Journal of American Studies*, a journal which Boerboek is a perfectly adequate substitute for the detailed research which is increasingly being supplanted today to the personalities of the mass media pioneers, since it contains our richest and most critical material, is someone not entrusted of his message nor of taking the main highway into a starry vision such is evitable. What none is needed, however, in an era where the legend which was awaiting the living lives in these men is beginning to subside, is a form of study which relate them to the whole social field of forces in which their products thrived. What were the assumptions and understandings of the policy-makers, the general public which inhabited the mind of Northcliffe and Lloyd George, of Luce and Trumau, of Boerboek and

Take the lid

tars and publishers throughout the years of the Great War, which they seldom admitted in public but which fill their private diaries. These were not journalists in search of stories in the sense in which scores of writers pursue Presidents and Prime Ministers in the present day of instant news and instant politics. This was a relatively leisured age in which wealthy men longed to own newspapers for the social prestige and political entrée which they conferred.

Neither Victor Matthews nor Raulo Mierala nor Kennedy Thomson nor Sulzberger nor even Katherine Graham (who gets closest to it) have thought of themselves as people whose task it is to pick the leaders of the major parties in their respective countries. None of them, for as we know, is in the habit of issuing ultimatums to ministers or the accords of state or the major questions of the day. Perhaps in France we can still see in Hersant and in the people today fighting over the control of *Parisien Libéré* and *Amorce* a pressing desire to make the press alter the position in the rest of the world is not, by any means, a shrinking in the political purview of the media, nor in their concern for the political and economic life in which the media own in the socialist and the economy. The change lies in the shared beliefs of rulers and media barons about the public and the media, the mutual belief of the two groups. What these transcendent studies lack, therefore, is that broader grasp of the social and historic context at large in which power and greed, scholarship and vast insight,

Michael Clarke

The Architecture of the French Enlightenment. By Allen Brahm. Thames and Hudson £25.00 \$80.00

[illegible]

As we will see, the book is not a mere collection of facts, but a carefully organized and annotated bibliography of the literature on the subject. The book is divided into two main parts: the first part, "The History of the Idea of the City," and the second part, "The City as a Social and Cultural Entity." The first part is a historical survey of the idea of the city, from its origins in ancient times to its development in the modern world. The second part is a more detailed study of the city as a social and cultural entity, examining its various functions and the ways in which it has evolved over time.

wielding considerable political and cultural power. Having first secured the post of Surintendant des Bâtimens du Roi for her brother, Abel Poisson, later Macquès de Méligny, her influence over Loo's chief minister, the Duc de Choiseul, became so great that, as it was said, "she had her hand on the strings" of the government. She effectively decided on public buildings and monuments in contact with the king and the Académie des Beaux Arts. Her liberal thought, in the Mme de Pompadour and her circle, corresponding with that of Voltaire and Rousseau, and through these channels, with the English and French Enlightenment, was a strong force even in the official architecture.

For the Kulligah, the true builders were Reason and Nature. So distinct was the way were far less so in the eighteenth century. In fact, they were more often than not, unified by the influence of the Renaissance architecture. Père Laugier had argued for a reform in architecture based upon the principles of the classical orders. He showed just how he saw the original Greek temple structure and pointed out the errors of the Renaissance architects who had introduced the classical orders into the modern world. He argued that the temple was the only true architecture, and that the modern world was in need of a return to the principles of the temple. He argued that the temple was the only true architecture, and that the modern world was in need of a return to the principles of the temple. He argued that the temple was the only true architecture, and that the modern world was in need of a return to the principles of the temple.

In most general accounts of the period it is the extremes in form, mostly restricted to unrealized designs and projects, which

for all it might concern itself with theory and speculative designs, is finely a more practical matter, and Brahama's discreet good sense prevented him from being unduly swayed by the force of projects alone. While recognizing the singular influence of the revolutionary ideas of the 1790s, he was not so taken in by the French Academy in Rome as it neither poses nor insists on the best qualities of Enlightenment architecture for him. These he disdains. He is more concerned with the period's buildings which he would represent, the new social, egalitarian needs. In Brahama's account we are far more likely to find us being impressed with the new buildings, than with their provision of greater comfort and the gradual disappearance of the socially divisive tiers of boxes, than with the new "grandes galeries" of the Bastille Project, for a Monument to the Nation. Newton, in the end, is not a day

This is most convincingly the case in his account of the architect who stands at the centre of his book, Ledoux. Although he is often lumped together with Boullée and Perronet as an extremist, it is as an architect of practical and social good sense that Boullée presents him. The plans for the imaginary town of Chaux-de-Fonds are the work of a realist, the actual planning and building of the Salpêtrière at Arc et Senans, of the theatre at Besançon, the parliament and prison at Aix and the new town gates of Paris, to which Boullée turns our attention. So persuasively does he present Ledoux as a realist that we are almost tempted to forget that he was one of the foremost architects of the Empire. It is well true that no one ever dominated the period at the time, but for us there can be little doubt who

Radio comedy drought

Frances Hill

The radio comedy drought has begun to show on now for some years and shows no sign of abating. But at least it has had the comendable side-effect of saving programme planners, in despair of finding good original comic material, looking about for new ways to use what they have in the archives. It has recently given rise to a couple of enjoyable programmes, somewhat out of the usual run, that attempt to enliven old catarisals with humour—a fascinating, if ultimately defeating, task.

The American Way of Love
(Tuesday, 10:02 p.m., Radio 1, 12-13)
The series is designed in the
English Times as a guided tour
transatlantic comedy. Listened
a fortnight to have Larry Adler
courier. His relaxed conversation
manner is easy on the ear and,
an American who has lived
England for 40 years, he can both
appreciate American humour as
slightly from afar. He probably
has been in London long enough
to have which was admitted by
all that clear of the difference
between English and American
comedy.

However, clearly, he has not so far in the past attempted to give as much about the banquo of silence. He has let others voice their opinions. Alfred Marks, the first programmer, suggested that Adler should be "a little more crueler than English." Bob Morhouse claimed, the reverse. (Adler's technique of presenting other comments without preliminary qualification made all agreeable change from one side to the other.) He moves the programmes as he pleases. Mostly, Adler has simply played recordings of American comedies, from Bob Hope to Woody Allen, and has been criticised for highlighting details of performance

listener to draw his own general conclusions.

These conclusions start coming from Americans myself, and I think they're humorous in perspective. Extreme self-consciousness and longing for success lead Americans to an acute sense of embarrassment or failure: hence Shelley Berman's brilliant monologue of the "white feeling" from the "white house" of Woodstock, or Lenny Bruce's last word on the "human race," "We're all the same, schmooske." But there are plenty more programmes to go; some rather straight is in order.

A few small criticisms can be made on the series as far as American comedy is concerned. The first is that, trusted without any English canny being, indeed, it might have been better to drop the attempt at direct comparison, if English material was not to be used. Larry Adler could have been one of the other classed comedians. The second criticism is on the "ethnology of American" comedians and their styles of humor. And it might have cut down a little on examples of routine from elderly comics, no longer ver-

But, then, those routines might seem as funny as ever to him. The wildly subjective nature of human perception is the heart of *Radio Days*, a series. It makes McLeugh (Sunday, 12-22, 12 pm) the series' eponymous tired "one man in the archives" formula precisely because it makes the presenters' purely subjective preferences the only criteria of what counts as a "radio classic." We are curious to know why funny people, like Basia, Boothroyd or Ben Travers, themselves find it so funny. The series works in a way in which most programming on public radio does not: by repeating demand. Frank Mul-000

Philip Jacobson

Decant Interval. By Frank Snapp
Allen Lane £8.95. 7139 1281 2. Pe
gulin £2.95. 14 005430 8.

One of the memories of the evacuation of Saigon in April, 1975, that I still treasure is the one of a young woman, much like me, who was wandering through the streets with a bouquet of nervous colleagues from our "Inoperative" assembly. Solntsev, another ex-Marxist helicopter pilot, was over her shoulder. The Vietnamese, who watched us approach to find it all rather amusing, winking and giggling as we scurried here and there, struggling in the heat with typewriters, a portable radio, a flashlight, a can of food, and a tin of matches, were in no practice of hostility, not even of contempt, not a jeer or a threat. A passing motorist gave us a Australian reporter and myself a short lift. He was going to visit his parents in his village as he did every week. Of course he realized what was happening, "you are all going home." Didn't he feel sorry, betrayed, abandoned? "What's the point?" he said, "life over, life will go on." The meaning of his parents would be a different thing.

Frank Snapp's angry, accusatory book—chronicling the disintegration and final collapse of American strategy in Vietnam—could serve as a monument to Vietnamese life that, although he concentrates on understandable reasons, on the "wonderful blood blown

and betrayals of agents, friends and collaborators" whom he considers the principal victims of "an evacuation which amounted to "an institutional disgrace." Sueng was the CIA's chief strategy analyst in Saigon for several years and he was there right up to the—for him—unbearably bitter day. As he remembers, "I do, now, the worst, the fat businessmen and the Vietnamese brose: not abandoning their units, never seemed to have much trouble getting out, not just in the days before Saigon fell but even on the last waves of helicopters.

Sueng's eye for detail is riveting. He tells us that the US ambassador Graham Martin, whose diplomatic and personal conduct receives much harsh criticism—orders the embassy's \$2 million contingency funds to be burned, their contents scattered into the air, and the target set on fire. When the helicopters arrive, their blades scatter charred dollar bills around the US compound and the Vietnamese girlfriend of an Embassy official stuffs them into her knickers before the aircraft

While this is happening, hundreds of Vietnamese associated in one way or another with the American presence—CIA agents, embassy secretaries, cooks, maids, drivers—are hammering desperately at the gates of the compound or, the greater bet, are perhaps, standing, pitifully

in line for their turn to board the sampans which are, in fact, rescue boats for foreigners (including, it may be stated, journalists like myself) and more fortunate Vietnamese friends in the right places. The bloodbath which a great many servers believed would follow the fall of Saigon may not have materialized, but in those last, panicked hours it was all the easy to believe the worst.

Much of Snapp's book, particularly the detailed revelations about American policy in Vietnam before the final collapse, will only be

where media coverage of the war was intermittent and dominated by reports of the actual fighting. Shepp's style is frequently colorful, usually occasionally snail, but it is the sheer gripping quality of what she can tell us that makes her so effective, and many know more than most commentators for this. The United States government's attempts to silence Shepp through the courts, as well as the efforts to silence her, told of course that the book was well liked, but it also tells us that she is particularly appropriate for the former. CIA executive who has produced the most vivid accounts of the war, she is a natural choice for the book. Shepp's style is gripping, and her accounts are well liked, but it is the sheer gripping quality of what she can tell us that makes her so effective, and many know more than most commentators for this. The United States government's attempts to silence Shepp through the courts, as well as the efforts to silence her, told of course that the book was well liked, but it also tells us that she is particularly appropriate for the former. CIA executive who has produced the most vivid accounts of the war, she is a natural choice for the book.

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The Dorian Aegaeon. By Elizabeth M. Crook. Nottelidge and Kegan Paul £7.95. 7100 0378 1.

The Travels of Herodotus. By R. P. Lister. Gordon and Breach £14.95. 96033 081 8.

Everybody unravels goes in the Greek Islands. Miss Crook's book is a study, historical and cultural, of a group of these islands linked not geographically but by antiquities. They were settled by the Dorians, Vikings of the ancient Greek world, who came from the north, occupied the Peloponnese, ousted or on my right displaced the Mycenaeans and in the south Aegean islands a band of islands running from Melos in the west to Rhodes in the east. Were there Dorians there already? Homer implies that there were. Some day, perhaps, the archaeologists, who have transformed our knowledge of the past, will tell us.

Meanwhile this scrupulous book gives the accounts and the sources for the long record. The 60 pages of appendices, bibliography, name index and subject index make this a book for the ideal holiday for the traveller on a holiday in, say, Kios to take with him—not unless he is taking along for reference the works of, for example, Dawkins and Myers, Mylonas and Marinatos, Boardman, Chadwick, Palmer, Liddell and Scott; a run of peripatetics from the Journal of Hellenic Studies to the German Zeitschrift and what not; and of course The Palace of Minos. It looks formidable.

And yet, as the famous old

scholarly names loom in one's head—names wryly familiar to me in the far-off days when I lived in archaeological society—one feels a stir of excitement. Today Greece is a country with a desperate desire to be modern. But one cannot travel there without hearing behind the traffic and the hubbub of the tourists the sound of the past. Miss Crook's book satisfies one's desire to know.

Natural that Rhodes, largest of the Dorian group—close to the Asia Minor coast where also there are Dorian settlements, and an important trading post—should dominate the study. To the traveller of antiquity, with its temples, theatres, dockyards, wells and harbours, it was a centre of civilization; after all, you don't often find a Colossus 32 metres high (a statue of Helios, actually) standing at the harbour mouth. The book, taking the story from the siege of Troy to the beginning of the Christian era, shows the island as the home of culture, a place of sanctuary to men banished from Rome. Theodosius, later to be Emperor, was among the exiles who chose to live there (and study philosophy).

But Miss Crook never neglects the other islands. They were productive of Melos, where the Venus de Milo was found, was a source for obsidian, the tough sharp volcanic glass, which was better than flint for making weapons. Kalymnos exported sponges (it still does). The wine of Kos was enjoyed by Strabo and Pliny. Kimolos supplied fuller's earth; Roman ladies used it as a face-powder. And as the bank follows Miss Crook's exploration of achievements in literature, medi-

cine and science, a picture emerges of an Aegean where in spite of the difficulties and dangers of searoyage (the journey from Athens to Rhodes might take three weeks), people travelled, traded, wrote poetry and speculated on the nature of the world they lived in.

It is a scholar's work, one of a series of books on ancient Greece; one must expect painless reading. Nevertheless one comes across enticing fragments of history and myth: the traveller in Scythia, for instance, might like to be reminded that Persians, who cut off the head of Medusa and rescued Andromeda from a sea-monster, were an earlier visitor. And of course there are the great names connected with the islands: Hippocrates, father of medicine, is associated with Kos; so is the originator of pastoral poetry, Theokritos. As Miss Crook says, we are inclined to see Greek civilization "through Axis eyes". Her evidence for a more universal culture in the Aegean supplies a corrective.

The Travels of Herodotus is a pleasure book. I don't mean that it doesn't inform; it is highly instructive, at once a commentary and an enlargement. It accompanies Herodotus to Scythia, Belyon, Egypt and Italy, not to mention Athens. It quotes, it tells the choral stories, but it never believes should not be slavish; thus we are told that Herodotus was fairly accurate about the habits of the crocodile, but probably never Delphic, the royal road to Suse. Delightful, and if it ever stings somebody off on the ancient world, it does the difference between history and fiction. I should urge him or her to read Mr. Lister.



Mosaic of Sileus, Rhodes.

Greek ghost town

Mistra. By Steven Runciman. Thames and Hudson £9.50. 500 25071 5.

Mistra, though not on the same site as the successor, ancient Sparta, but the contrast between the two towns could not be greater. Today

Sparta is a flat, rather dreary series of bumps in the ground broken only by a few wooden archaeological expositions. The power of the image its name evokes comes from generations of readers of Classical Greek history.

By contrast Mistra is a ghost town. It rises up the side of a steep hill to an imposing castle at the summit. Its churches are restored to give shelter to frescoes on their walls. The secular buildings are ruined and roofless but frequently have their walls standing nearly to full height. There is a three-dimensional character to the town which is rare in more thoroughly ruined places. The image of Mistra, though, is virtually non-existent. Its history belongs to the unfashionable and obscure periods of the Greek past.

Mistra began in the thirteenth century as a Latin castle—by the name of the stronghold carved in the hillside. It was the site of the Crusader capture of Constantinople in 1204. With the Greek recovery of their capital in 1261 and the emergence of a revitalized empire under the Palaeologi, Mistra became the provincial capital of the Peloponnese. It was largely controlled by the sons and brothers of the ruling emperors and these factors brought it into the forefront of the disintegrating and intellectual life. By now the intellectual life belongs largely to the historians of its influence on the Classics of the Italian Renaissance should be forgotten. The artistic fruits, however, are still very much present for any visitor to the town. They fall short of some of the great early Byzantine works of art but they really, compare with any contemporary painting included in that of the temple.

I started to read this book of Steven Runciman with a great sense of expectation. I finished it, I am afraid, with feelings of disappointment. Runciman gives an official history of Mistra in all its various phases, detailing its rulers and its plunderers. There are odd chapters on the town itself, but they are all very much general feeling. And in his own way he would have been right. Nevertheless this is a painstaking and not exclusively academic study, in its own way, could hardly be bettered.

The first two chapters of "The Composition of Four Quartets" are perhaps of interest. The original title of Eliot's mind was "Kensington Quartet", due to his association with what his friend and mentor, John Hayward, called "the Gloucester Road Period". However, first appeared in the May 1943 "Poetry" as "Kensington". Eliot ruefully conceded that "East Coker" written at high speed (as was "The Dry Salvages") was influenced by Blake and Clough, both masters of the long line. "Little Gidding" was written to a background of Jewish colds and brachitis, teeth extractions and struggles with dental plates, not to mention the London bombing.

By 1946 Eliot and Hayward had found a flat to live in together at 19 Carlyle Mansions, Cheyne Walk, Chelsea. Hayward moved in. February, Eliot joining him a month later. "The Marriage" Dame Helen informs us with not the slightest hesitancy, "lasted until Eliot's marriage in January 1957".

Frauds on the fairies

Lynne Truss on Dickens

Dickens and the Invisible World: fairy tales, fantasy, and novel-making. By Harry Stone. Macmillan £12.00. 333 27697 3.

"Frauds on the Fairies" was an essay in which Dickens vehemently attacked George Cruikshank's project of adapting fairy tales as "narratives of fancy". "Frauds on the Fairies" would be a suitable description of Harry Stone's book, for he, like Cruikshank, is guilty of mishandling a delicate element of Dickens' "fancy" and debasing it by literal-mindedness.

His central line of argument is that Dickens, when employed at the blacking warehouse, plundered his imagination for romantic fairy tales in order to transform sordid reality, and that the habit of endowing the vividly perceived familiar world with imagined magical potential is the key to his technique as a novelist. Stone sees a clear progression in Dickens' work from incidental references to fairy tales in his early novels to a thorough incorporation of the structures of Great Expectations. About half the book is devoted to David Copperfield and Great Expectations. That these two novels are first-person narratives with all imagery derived from the emotional and fictionalizing recollection of their narrators is not commented on.

But still, the book has a promising subject. Analysis of symbolism in Dickens' novels by recent critics has often shown them to have a remarkable unity of imaginative structure. Stone, however, acknowledges neither the work of



Dickens by H. Furness, drawn for "Punch" and "Vanity Fair".

other critics nor the function of symbolism. He seems to be content only to prove that the characters in Dickens' novels are attributes to fairy-tale archetypes and are therefore equatable with them. Florence Dombey, it turns out, is really only Cinderella. Betty Trotwood is a witch who is transformed into a fairy godmother, while Miss Havisham is a fairy godmother transformed into a witch. One would respond with more gratitude for having such associations pointed out were they presented more tentatively, but as it is one is irritated by the insistent reduction of characters to single associations and bewildered by the assertion that this process of identification is itself "magical".

For example, the young David Copperfield, as has often been noticed, associates the new black dog in the previously empty kennel with its owner Mr. Murdstone. Stone comments, "David's act of identification is also an act of transformation. He turns Mr. Murdstone into a dog. In this respect Copperfield is like the immortal fairy tales—like The Six Swans or The Frog Prince—in which a protagonist is transformed for a term into an animal."

This is then referred to as a "magical transformation". For Stone, in fact, anything that has any element that separates it from the strictly normal is "magical", "fairylike", "storybook". It is not natural it is supernatural. Of Rose Dartle it is said that "her most obvious fairy-tale sign is the terrible scar which runs across her mouth and down her chin". It is as if Stone were in a state of enchantment.

Readers of this book will not find themselves better equipped to deal with the many startling, often jarring, fairy-tale references they encounter in Dickens' novels. How is one supposed to react, for example, when Pip, early in Great Expectations, says: "I had seen the damp lying on the outside of my little window, as if some goblin had been crying there all night, and using the window for a pocket-handkerchief"? What response did Dickens expect to elicit by such an outrageous image? Does it make Pip "a creature of the night", like David Copperfield, a seer of ghosts? The important question is, to adopt the words of Peggotty and Biddy: "Whatever put that idea in his head?"

Lawrence in a landscape

Myra Barrs

The Life of D. H. Lawrence. By Keith Sagar. Eyre Methuen £9.95. 413 39950 8.

D. H. Lawrence Country. By Roy Spencer. Cecil Wain, Kingley Court, London W1A 1AA. £3.50. 900821 44 2. £1.95. 45 0.

Keith Sagar's Illustrated biography of D. H. Lawrence has two distinctive features. It draws extensively on Lawrence's letters—there are five thousand of them, and Mr Sagar is one of the editors of the complete edition of the letters, now in preparation. It is also copiously illustrated, mostly with engravings of Lawrence and his friends, but with a colour section which reproduces several of Lawrence's paintings.

The text is densely informative—Keith Sagar has condensed a tremendous amount of material into 250 pages—but it is the plain-graphics which are the saving of the book. For as Lawrence's wanderings, and the tone of his letters, become more desperate and feeble, as such possible location for a common narrative is rejected in turn, Lawrence, Frieda and their friends, and the company of friends, only they give very much sense of the desolation which produced this conclusion characterizes the whole book. Spencer's local knowledge—he is an Eastwood man—means that he can allude to Lawrence's early experiences in a real landscape, and a familiar community, and this gives his book a particular strength.

ing, inescapable, taints everything. "I find people ultimately boring; and you can't have fiction without people. So fiction does not, at the bottom, interest me any more", he wrote in 1918.

It was this same mood that informed his essays on education which Lawrence submitted to the Times Educational Supplement later that year and which were turned down by the then editor, G. S. Freeman. One quotation is enough to give the flavour, and account for the rejection:

Abolish all the bunkum, go back to the three Rs. Don't cultivate any more imagination or all in children. It only means perilsous self-consciousness. The self-consciousness and all the damned high-flownness must be taken out of them, and their little personalities must be slipped in the mud.

Ray Spencer's absorbing little book draws on Eastwood memories of the Lawrence, and calls into question some traditional assumptions about Lawrence's family. His investigations of Lawrence's mother's background leads him to disagree with Lawrence's description of her social position as "superior". She came from town and belonged to the lower bourgeoisie. The careful fieldwork which produced this conclusion characterizes the whole book. Spencer's local knowledge—he is an Eastwood man—means that he can allude to Lawrence's early experiences in a real landscape, and a familiar community, and this gives his book a particular strength.

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2, Davy House, 2, Oxford Road East, Windsor, Berks SL4 1DF.

Tales of great men and great events

Colin Platt

A History of Europe. By John Bowle. Sackner and Waring £12.50. 436 05906 1.

John Bowle's ambitious and courageous new book has something in it for everybody. In six main sections, it moves from Pre-historic Europe to Mediterranean Antiquity, from the Middle Ages to Christian Europe through The Rise of Dynastic States to The Age of Oceans, with last words, surprisingly abbreviated, on Industrial Revolution, Democracy, and Nationalism. Not all Bowle's readers will agree with the weighting he accords to each section. However, as the man's interpretation of the unfolding of a culture, he has a clear inner consistency.

A History of Europe, for all its unvarnished, and a boldness of sweep and a directness of opinion which are themselves very attractive. In particular, John Bowle's long interest in political thought has added a individual dimension to his discussion of European cultural achievement. He is the great man and great events, and is usually good at describing them. There are always merits in his personal view.

Sadly, there are snags as well. John Bowle has no time for the "treasonous myth" of Mordant. Fair enough, we may say, that is his opinion; but he has other private glances at well in this year of rehabilitation of Vikings, Bowle finds them "treasonous" boys. Freese at the time of Louis XIV ("the most dazzling and powerful monarch in Europe") is beset by "treasonous" and "routinized" Louis XIV's queen is a "plotting and boring princess" of the unkind kind, devoid of other virtues, is "a glutton" of a pioneer at least in consuming "salads". When, near the opening of the

final section, we are told that "it would be tedious here again to traverse the well-known stages of its (the industrial revolution's) early development", we are almost ready to agree.

It is not that John Bowle has severed himself from earlier rigorous expositions. He takes us on a lecture tour through the French cathedrals, for which John Bowle's Ghostly Good Taste is one of his few quoted guides. In another instance he gives us a long Latin quotation, only to render it into English. Immediately afterwards, And he has a fondness, perhaps natural in an encyclopedia for totally unnecessary information. Frederick II, we are told in a typical aside, sent three cheetahs to Isabella of England. Nor does Bowle fail to remind us, time and again, of the birthplace of the artists he invokes.

Tilian was "born about 1488 at Pieve di Odescare near the Julian Alps". Niccolò Pousin "was born near Les Andelys". Claude Lorraine "was born near Nancy". Giambattista Tiepolo "was born in Pieve di Odescare". Donatello "lived and died in Bergamo". Hector Berlioz was "born near Granville the son of a doctor". Robert Schumann "came from Zwickau in Saxony, and died in the Rhineland at Bonn". Sometimes, as in the case of Leonardo, it may vary well be helpful to be told that he was "born a Florentine". In most other instances it would be just about as useful to know under which constellation the infant genius was delivered into this world.

But perhaps, after all, it is a little ungenerous to complain about being given too much. This is a big book, packed with information and easily accessible even in a good school library, and not let our eyes over-price. What it cannot claim to be is a replacement for H. A. L. Fisher.

Paperbacks

Verse, head, heart

John Horder

The Composition of Four Quartets. By Helen Gardner. Faber Paperbacks £3.95. 571 1501 7.

The Faber Book of Religious Verse. Edited by Helen Gardner. Faber Paperbacks £3.50. 571 11452 0.

A Tale of Mockery. Edited by James Reeves. Heinemann Educational £2.50. 435 14773 0.

The Poems with their Spells. By Jon Silkin. Routledge and Kegan Paul £2.95. 7100 0697 4.

D. H. Lawrence was the last great poet to be fully aware of the conflict between the organic and intellectual. He would have no doubt dismissed Helen Gardner's The Composition of Four Quartets as a bag of all in the head and having very little to do with heart or feeling. And in his own way he would have been right. Nevertheless this is a painstaking and not exclusively academic study, in its own way, could hardly be bettered.

The first two chapters of "The Composition of Four Quartets" are perhaps of interest. The original title of Eliot's mind was "Kensington Quartet", due to his association with what his friend and mentor, John Hayward, called "the Gloucester Road Period". However, first appeared in the May 1943 "Poetry" as "Kensington". Eliot ruefully conceded that "East Coker" written at high speed (as was "The Dry Salvages") was influenced by Blake and Clough, both masters of the long line. "Little Gidding" was written to a background of Jewish colds and brachitis, teeth extractions and struggles with dental plates, not to mention the London bombing.

By 1946 Eliot and Hayward had found a flat to live in together at 19 Carlyle Mansions, Cheyne Walk, Chelsea. Hayward moved in. February, Eliot joining him a month later. "The Marriage" Dame Helen informs us with not the slightest hesitancy, "lasted until Eliot's marriage in January 1957".

The chapter on the sources, including those of "East Coker", brings us to the heart of the matter. After remarking that he found it hard to believe "East Coker" was really good after selling 12,000 copies, he notes his intention was to avoid a justiciade of George Herbert or Crashaw... and to do something in the style of Cleveland or Balthus, only better. Dame Helen then proceeds to direct us to further useful nuggets; Allison Peers's translation of John of the Cross, which was in Eliot's library, is the background to lines 133-146. "Of" prevents us "in line 161 she says the change was not made until the appearance of East Coker in the posthumous form. "Some thought" should have been given though, to slanting it more towards the needs of the thriving body of amateur printers who delight in the bit of type on paper, or else relating its comments on letterpress to the slapdash works and office lino printers of today. (Say "Voltaire" to a professional printer these days and he will think you mean a domestic paint or an international terms star.)

More work could also have been done on the bibliography, cutting out dead texts and directing attention to readings within specific areas of interest. Furthermore, Herbert Simon ought not to call Herbert Davis "Hubert".

Drina Alderson

Here Dame Helen's mention comes into its own, completely. At £3.95 The Composition of Four Quartets is a snip. The Faber Book of Religious Verse edited by Helen Gardner, ranges from a real jewel, "Christ's Love-Song" by Anonymous to "Fox" by D. H. Lawrence. The other part I discovered was Robert Southey's "Upon the Image of Death". But why do Geoffrey Hill?

A Tale of Mockery, edited by James Reeves, contains much devilish enjoyment from start to finish, not least his own series, "Personality Cult", and "Spicer's Instant Poetry". Lastly Lawrence himself would have enjoyed Jon Silkin's eighth collection, not least for his fierce and passionate confrontation with life's struggles, but also for his attempts to balance head, heart with feelings. There is no higher praise I can give to a poet writing today.

Typewrite

Introduction to Printing: The Craft of the Letterpress. By Herbert Simon. Illustrated by Tom Hughes. Faber £2.50. 571 1528 4.

Twelve years have elapsed since the original hardcover edition of this admirably serviceable manual. It is serviceable because it is succinct, rational and dedicated to ascertaining the classic norms of its subject—but these 12 years have decisively changed "the craft of letterpress" and have rendered even more anachronistic an approach that was somewhat antiquated even in 1969.

This is not to say that the book is not welcome—we need Mr Simon's sanity as much as ever. Some thought should have been given though, to slanting it more towards the needs of the thriving body of amateur printers who delight in the bit of type on paper, or else relating its comments on letterpress to the slapdash works and office lino printers of today. (Say "Voltaire" to a professional printer these days and he will think you mean a domestic paint or an international terms star.)

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Among this week's contributors:

Myra Barrs is English adviser for the London Borough of Brent. John Horder is a poet and writer and the author of A Sense of Being. Philip Jacobson is a foreign correspondent on The Sunday Times. Colin Platt lectures in History at Southampton University. Anthony Smith is director of the British Film Institute.

Cognitive Psychology

New Directions

Edited by GUY CLAXTON

Chelms College, University of London. Designed to present key topics in cognitive psychology in university and college students in a way that draws out the main ideas behind those topics, the book also shows how these ideas are likely to develop over the next few years. This is the first book in a new series: The International Library of Psychology, edited by Professor Max Coltheart. 0 7100 0488 0 (hpb) £12.50. 0 7100 0488 3 (paper) £6.95.

Illusions of Equality

DAVID E. COOPER

University of Surrey. Educational policy and discussion are increasingly dominated by the confused ideology of egalitarianism. David Cooper identifies the principles hidden among the confusions, and argues that these necessarily conflict with the ideal of educational excellence, an ideal that must be preserved. International Library of the Philosophy of Education. 0 7100 0360 9 £8.95.

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Paperbacks

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Routledge Italian-English, English-Italian Pocket Dictionary. Compiled by JOHN FURVES. 0 7100 0602 0 £3.95.

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Routledge Spanish-English, English-Spanish Pocket Dictionary. Compiled by G. H. CALVERT. 0 7100 0606 0 £2.95.

Routledge & Kegan Paul, 33 Store Street, London WC1.

RKP

books

Polishing the apple

Frank Anstis on the ILEA's new physics project

Applied Physics Project for Independent Learning. By the ILEA Physics Project Team. Student's Handbook £1.55, Teacher's Handbook £1.55, Structure of Matter £1.60, Teacher's guide, Forces and Motion £1.75, Teacher's guide 80p, Electrical Properties £2.25, Teacher's guide 80p, Material Properties £1.60, Teacher's guide 80p, Forces and Fields £2.10, Teacher's guide 80p, (Vibrations and Waves, Thermal Properties, Electrons and the Nucleus, Electro-magnetism to be published.) John Murray.

Students in several Inner London schools should be able to answer the question "What is the connection between an A-level physics course and an apple?" because they will have had experience of APPL (pronounced apple) which is the acronym for the Advanced Physics Project for Independent Learning. The project's recent publication challenges physics teachers everywhere to consider the more serious question of whether, or not, the APPL approach has relevance in a wider context.

Physics teachers should make it their urgent concern to study this material with the greatest of care. APPL is essentially a programme for directing independent learning and it has not therefore been designed as a textbook. It relies instead upon a carefully selected list of A-level texts which include most of the better ones that have recently been published (although curiously omitting G. M. Mossop's *Advanced Level Atomic Physics*) and one or two older texts still widely current in schools.

Every physics syllabus contains topics which even the most lucid teacher has difficulty in explaining; at these points the APPL guides temporarily adopt the role of textbook and incidentally reveal their authors' considerable experience as teachers. Help is sometimes given by added explanation, but often by carefully structured development questions.

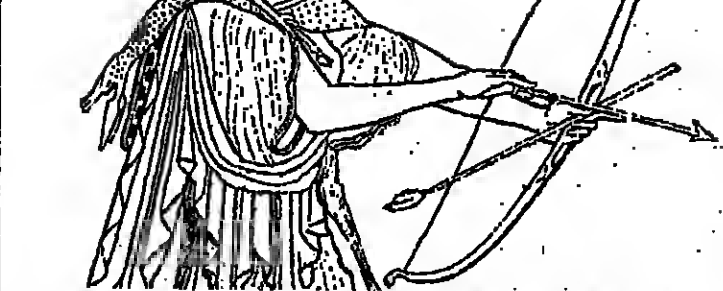
Physics is taught as a practical subject and each of the 10 units suggests suitable experiments which are introduced at appropriate points in the course. The actual requirement for apparatus has been kept within 10 pence, thereby making it possible for a variety of starting points in the immensely impressive both in its flexibility and in its soundness of approach. Used properly, it must surely provide teachers with an opportunity for restructuring their own classes in a manner which will be uniquely beneficial to their students and to themselves. It is a project which could eventually have a much influence on the style of sixth form teaching as the Nuffield scheme has had on the development of modern syllabi.

If students become genuinely less dependent upon their teachers they will need methods of assessing their own progress, and there are numerous questions provided for this purpose throughout the two-year APPL course with ample emphasis given to their importance. Students are tutored solely on a diet of relatively simple, and well structured

self-assessment questions from the APPL package would be no match for the wily A-level examiners, and teachers must continue to be responsible for ensuring that questions from relevant GCSE papers are tackled at every stage. The key to the scheme's successful implementation is contained in two guides. The teacher's copy contains an explicit statement of aims, the course's structure, and various methods for introducing a measure of independent learning to classes of different sizes. The student's guide is an equally indispensable companion for the APPL course, but it can also be recommended to other sixth-form physicists for its extremely helpful hints on study.

With a course prepared by such an experienced team, checked by constant testing and cross referencing to precluding teachers, and finally submitted for comment to John Warron and Patrick Whelan, it is hardly surprising to discover that it is pleasantly free from major flaws. As with all new projects, it at first appears alarmingly difficult to disentangle the course from the jargon and to find one's way around the handbook and guides. It is less daunting, however, than the similar material from the Nuffield Physics project.

APPL appears as a stimulating innovation with tremendous potential for development. Its publishers, having transposed the acronym into an apple-like logo, probably expect us to associate it with the apple that triggered the inception of Newtonian mechanics. Only those unusually wary of change will think instead of that other apple associated with the fall from a Eden idyllic state in the Garden of Ede-



This drawing of Aristotle is one of many such illustrations by Heather Copple and Christopher Chamberlain which adorn the Bodley Head's reissue of Roger Lancelyn Green's retelling of Greek myths, *Heroes of Greece and Troy* (£4.50). Now twenty years old, this is still a book to grace any young person's classic shelf.

Children's literature

Ride a cock-horse

Fred Ughuhat

The World's Greatest Horse Stories. Edited by J. N. P. Watson. Puddington Press £5.95. 7092 0874 X.

I'm always a little chary of claims to greatness, except for Muhammad Ali's charmingly boastful one. I think, though, that the affection reserved for Muhammad can be extended to J. N. P. Watson's collection. His eulogy really does contain many of the greatest pieces written about horses. Not all are here, of course. Everybody has his own favourites, and so, as Mr Watson says, the book "far from being exhaustive, does not pretend to represent much more than a tip of the iceberg of equine and equestrian writing".

It is a very large tip, however. J. N. P. Watson is the hunting correspondent of *Country Life*, and has been a major in the Household Cavalry, a showjumper, polo-player and race-rider. His taste is catholic, his equine knowledge wide, and this is displayed in his introduction, which to each of the 12 sections the book is divided into. Well-known pieces from *Black Beauty* and *Notional Velvet*, George Bernard Shaw's exhilarating ride on a cob, King's polo pony "the Maltese Cross", George Orwell's story with Lord Scampston's hounds, all find a place in the line-up with horses from Chaucer, Plutarch, Jonathan Swift, Cervantes, W. H. Prescott, Shakespeare and many others not likely to be mentioned much in horse circles. Few of the great horse connected with horses are missing. Stove

Donoghue, Dorlan Williams, Lucinda Prior-Fulmer, Pet Smythe appear beside Washington Irving, Dickens, Conan Doyle and Winham Churchill. John Hielop hints at the cock-horse, "Nimrod" hunts in *Leicester Square* in the 1820s; and Pers Crowell writes about American Quarter Horses.

The book contains many surprises. It was a delight to find the Maharajah and the Juddahs from *King of the Jungle*, Miss Boyle, who wrote some very good things about horses, is usually neglected by equine anthologists. Other welcome surprises are an episode from *Rail Smiles* A. Trae Groves in *Brooklyn*; John O'Hara's story about an American small town boy on his way to riding lessons; and "Macos" advice to pun players, written in 1931. "Macos" had the pen-name of Lord Louis Mountbatten.

It is disappointing that Tolson, who has so many horses galloping through his pages, is represented only by part of the account of the steeplechase in *Animal Kingdom*, where Vronsky breaks his mare's back making a wrong movement. One might expect Tolson's much more famous horse, "Strider", here. But of course "Strider" is really too long for most anthologies.

This celebration of the horse to poetry, essay, story and legend is a delight to look at with its black and white illustrations and George Stubbs's picture of "Whistler". On the cover, and it is an even greater delight to read.

Dorothy Butler, who this year's *Reader's Digest* Award for "outstanding services to children's literature" in *Children's Books* (published last year by Hodder £3.50) Mrs Butler described her own experience in using books to stimulate the development of her genetically handicapped grandchild. Her new book *Books Need Books*, is a general guide to children and reading for all parents. It will be published on May 22nd (Bodley Head £4.95). A specialist bookseller and lecturer who used to be very careful to avoid loose, distortion, will be very expensive. The lower priced high power magnifiers will be useful for upper junior and secondary schools.

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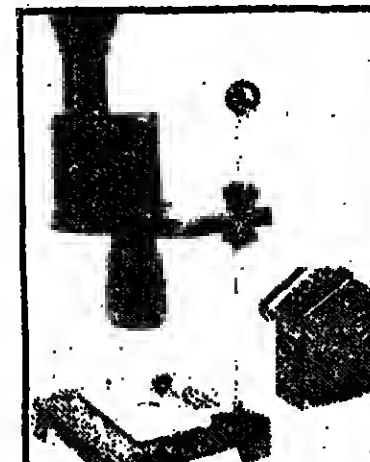
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Left to right: The MNC 300 D from Griffin and George; the B 24180/1 student microscope from Griffin and George; the Offord Scientist microscope; the Osnirold LRM simple tripod microscope and the Griffin and George MIS 300 N.

Small worlds

JOHN WRAY surveys microscopes and magnifiers

Microscopes increase the apparent size of objects of the eye, and allow us to distinguish detail. Some microscopes, however, give very poor images and it is the purpose of this article to discuss how to choose one. The models under review range from the simple (an individual lens or a number of lenses mounted close together as a single unit) to the compound (two widely separated systems of lenses). Simple microscopes or magnifiers give an erect image in a range from X2 up to X30. Lower power magnifiers have lenses of large diameter, often 50mm or more. They can be held close to the eye and are often mounted on a stand, or as part of a container to make a nature viewer. The lenses may be made of glass—large ones are surprisingly heavy—or of plastics.

The quality of the image is usually good, though there is often a noticeable decrease towards its edge. They also have a wide field of view, so an entirely large object can be viewed. Low power magnifiers can be quite cheap, especially if the lenses are made of plastic. However, plastic lenses scratch easily.

High power magnifiers, say more than X3, usually have several glass lenses mounted together either as a single fixed magnification lens unit or as separate lower magnification lenses which can be used separately, or combined together to give higher magnification. The object has to be held near to the magnifier and the magnifier close to the eye. They have a small field of view, so only small parts of large objects can be viewed.

The component lenses of these magnifiers will be of high quality manufacture and those giving the highest magnifications, since they need to be very carefully ground to avoid loose, distortion, will be very expensive. The lower priced high power magnifiers will be useful for upper junior and secondary schools.

Compound microscopes with two widely separated lenses of systems of lenses are usually more expensive than the high power magnifiers. These microscopes may be either binocular, the image being viewed with one eye, or binocular with both eyes are used and a stereoscopic effect achieved. The image in most monoculars is inverted and the wrong way round. In consequence young children often find them difficult to use.

The image in binocular microscopes is erect and the right way round, and the distance between the lower lenses and the object, to be viewed, the working distance, is large compared with that of monoculars. This means that large objects can be viewed. These are attractive, and versatile instruments, although people do not perceive the stereoscopic effect.

When using a simple magnifier good illumination is a considerable help. It is essential when using a compound microscope especially if light has to be passed through the specimen to be examined. However, in lower schools, it will be unnecessary to buy special microscope lamps; table lamps with flex

ible arms are often ideal or battery powered pen torches with lens-aided bulbs can be used. Motorists' battery lanterns with adjustable lamp units could be tried. Before buying any mains operated lamps, teachers must check that the type complies with local regulations on electrical safety.

It is not possible to buy one microscope which will do everything, so before buying there are a number of questions to be answered. What is the age and ability of the children? What do you want them to look at? How much money can you spend on the microscopes? Consideration of these questions should be in the order given, even though cost may seem to be of paramount importance. At all costs the cheap toy microscope is to be avoided.

It is vital to consider the age and abilities of the children who will use the microscope. Young children can often see what much with the naked eye as they can with magnifiers of up to X40; it is their sight, and not that of the teacher, that is important. However, they may not be able to handle heavy magnifiers effectively.

For children below seven to eight years, simple large light-weight magnifiers and lenses mounted in nature viewers or on stands are suitable. Older children can use the higher powered magnifiers. The first compound microscope to buy should be a binocular as they are versatile and can be used even by young children. Monocular compound microscopes will only be needed by middle and upper juniors. Buy the more expensive monocular microscopes only after considerable thought.

The age of the children and the objects for examination will dictate the type of equipment. The table suggests 35mm transparencies for looking at bacteria and red blood cells. To prepare specimens of these and to use a compound microscope to look at them or compound microscopes, slides require skill and experience usually beyond that of junior children and often beyond that of their teachers.

Having decided on the type of equipment required, there is gen-

erally a wide choice. Nature viewers are boxes, usually transparent, with a removable lens at one end or fixed lenses and a revolving cap and are ideal for examining and containing active "microbeasts". Their lenses can often be used independently.

Among the better models are the Osnirold magnifier, 75mm in diameter, X6, £5.24 (£7.15 for pack of 25), midispectra 75mm diameter, X2, £5.25 (£5.05) and magnispectra, 103mm in diameter, X2, £5.30 (£4.45) from E. S. Perry. Twin lens nature viewers with a magnification of about X6, MAH 330C (£10 for a pack of 10) from Griffin & George Ltd, or B 42720/9 (£1.12 each) from Philip Harris Ltd.

There is a bewildering variety of hand held magnifiers and lenses often dictated by finance. Suitable types include: hand viewer X10, B 42020/3 (£2.59), pocket magnifier X2.5 or X6, B 41780/0 (£2.15) from Philip Harris Ltd, double folding magnifier X3 or X6, MAH 240/030V (£1.10) or triple X3, X6 and X9, MAH 240/050P (£1.50) from Griffin & George Ltd. More expensive magnifiers with optical corrected lenses include: folding magnifier X10, MAH 230/030 (£1.20) and X20, MAH 230/050 (£1.90) from Griffin & George Ltd.

Magnifiers mounted on a stand are particularly useful, since they leave the hands free. Suitable types include the Osnirold LRM X10 or X25, £5.10 (£5.95 each or four for £20.25) from E. S. Perry; junior magnifier stand X25, H 41640/6 (£1.16) and flexible arm magnifier X2, B 41020/9 (£1.05) from Philip Harris Ltd.

Steeper microscopes are recommended for general use. Those mentioned are at the cheapest end of the price scale, and represent very good value. They include the Swift stereo magnifier, X15, £20.00/3 (£37) from Philip Harris Ltd; the junior stereo microscope X20, MNC 300D (£36.75) from Griffin & George Ltd and the Opor OWW with a range of magnification X15, X30 and X40 (£35) or OWW X15 only (£29.50).

There is a large range of com-

ound monocular microscopes, once again at the cheaper end of the price scale and representing very good value. The Offord Scientist Scientific Equipment (£12.50) gives an erect image magnified X20, it is best used in examine solid specimens with top light. The BSM microscope from Bausch & Lomb are of fixed magnification and can be used with transmitted light through prepared microscope slides or with top light on solid specimens, focusing being controlled by twisting the eyepiece, there are two in the range the BSM X40 (£15.95) and the BSM X100 (£15.95).

More advanced junior monocular microscopes include the Griffin Minor Microscope MIS 300N giving a range of magnification up to X200 (£29.50) from Griffin & George Ltd and the Harris Summit microscope, B 24180/1 giving a range of magnification up to X200 (£39.95) from Philip Harris Ltd. A magnifier operated illuminator unit (B 24185/0) to fit this microscope is available at £7.12. It is usual to use both these microscopes with transmitted light passed through the specimen mounted on a glass microscope slide.

After deciding on the type of microscope, or microscopes, are

remain to work out how many will be needed. It seems practical to buy the simple magnifiers and nature viewers first, in enough quantity to avoid squabbles, next to buy a number of monocular magnifiers, then several binocular stereo microscopes, and finally one or two junior monocular microscopes. All this equipment needs to be stored carefully, so that it is accessible, and the numbers can be checked at the end of lessons.

Assuming that an infant or junior school are on the same site, if not in the same building, and that equipment can be readily moved around and shared, the following equipment might be considered adequate: simple magnifiers/nature viewers enough for one per pupil for one class—say 20 (about £30); five monocular magnifiers (up to £40); three binocular (stereo) microscopes (around £130); and two junior compound microscopes (up to £80). All the prices quoted are approximate, and exclude carriage and VAT. Addresses overleaf.

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Asking the questions

Mary Linington

Assessment Questions for Integrated Science. By S. Kellington. Heinemann Educational Scottish Integrated Science, Book 2, 95p, 435, 57501 5. Teachers' Guide £2.50.

Questions to Combined Science for Years 1 and 2. By G. Green, K. Peacock, A. Shute, Dr. Walker, D. Charles. John Murray, Book 1, 90p, Teachers' book £1.25, Book 2, 95p, Teachers' book £1.50.

These two sets of question books were written to parallel courses Assessment Questions for Integrated Science follows the Scottish Integrated Science scheme, while Questions in Combined Science follows the same authors.

Questions in Combined Science offers two pupils books, and the appropriate teachers' guides. The questions are graded in order of difficulty and vary in type, including multiple choice and open ended

ones. The teachers' guides contain answers, and further questions for examination use. These questions can be used in the classroom, or for lower school science courses.

The teachers' guide of Assessment Questions for Integrated Science contains detailed analysis of the questions in terms of course objectives and facility. The construction of the questions and analysis of the results is also discussed. While the book states that it is not intended to be a text on the techniques of assessment, it does provide a useful starting point for test design, since a large part of the book is devoted to the study of assessment. The questions in the pupils' book are also reproduced, although in reduction.

While either set of books would be useful for examination or homework, those teachers intending to design their own examinations would find Assessment Questions for Integrated Science of considerable help.

Practising the answers

Multiple Choice Questions for A-level Chemistry

By Derek Stebbins

Butterworths £2.95 408 10644 1

There are several books of objective questions in A-level chemistry on the market, but they are lacking in one of two important respects. Either the questions are not in the form actually used by examiners, or the answers given are of best quality, with no extended explanation, or both of these.

Multiple Choice Questions for A-level Chemistry is a book which fills the gap. It contains over 400 questions, which are grouped in a logical way, and are of the type actually used by examiners. The questions are of the type actually used by examiners, and the answers are of the best quality, with no extended explanation, or both of these.

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tested questions from past papers of the London, Nuffield and AEB Examinations, and are of the type actually used by examiners.

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resources

New forms for old technology

ADRIAN HOPE on Audio-Visual 80

It is perhaps ironic that, with video now accepted as an everyday industrial and educational tool, interest in slide projection is waning. Visitors to AV 80 had the opportunity to see numerous slide/tape presentations and several very dramatic improvements were demonstrated.

Most readers of *The Times* will already be familiar with basic slide/ape presentation techniques. But, as was well evidenced recently at a lecture given to London architects on recent advances in this field of technology, in many professional circles there is still considerable ignorance about what a synchronized slide and tape presentation can offer. It was for instance plain from questions asked that for many of the architectural audience a slide-tape show meant nothing more than the projection of a sequence of slides with loosely synchronized music or speech soundtrack.

The modern generation of slide/tape systems relies on anything from two to several dozen slide projectors, all under the synchronized regime of a computer. The projectors are mounted on one alongside the audio soundtrack, and with the projector's functions controlled by a microprocessor or mini-computer sending the pulses. By switching rapidly between different projectors, or by fading and dissolving slowly, or by superimposing the images from several projectors, it is now possible to produce on screen a continuously changing image of extreme clarity, brilliance and beauty.

At AV 80 arguably the most exciting slide display was presented by the British Firm, Clear Light (10-11 Great Newport Street, London WC2) using United States-made Star microprocessor controls, dissolve units and fifteen rapid-change Kodak Carousel slide projectors. With this equipment, Clear Light presented a demonstration which included the unique sight of a human face in close-up speaking words heard from the soundtrack, and with lip movements uncannily synchronized with the speech. I have had never previously seen lip-synch attempted on slide-tape show and the effect was quite magnificent.

Probably the most famous British name in slide-tape synchronization is Electrosonic (815 Weymouth Road, London SE17) which markets a wide range of systems. Electrosonic now offer two new gadgets. The Electrosonic ALC is an automatic lamp changer which costs about £100 and can be fitted to the new Kodak 2020 Carousel. These projectors already make provision for two lamps which can be manually changed over when one fails. The Electrosonic ALC automatically senses a failed lamp, makes the change over mechanically and alerts the operator.

Electrosonic were also launching the Barco computer random access system for slide projectors. This is a small microprocessor unit and can be fitted to a Carousel projector. It allows slides in the Carousel magazine to be coded numerically and can be recalled by watching the appropriate number on the keyboard. The projector simply hunts for the coded slide, takes it out, and projects it backwords or forwards around the magazine. Cost of the simplest Barco system, a single projector,

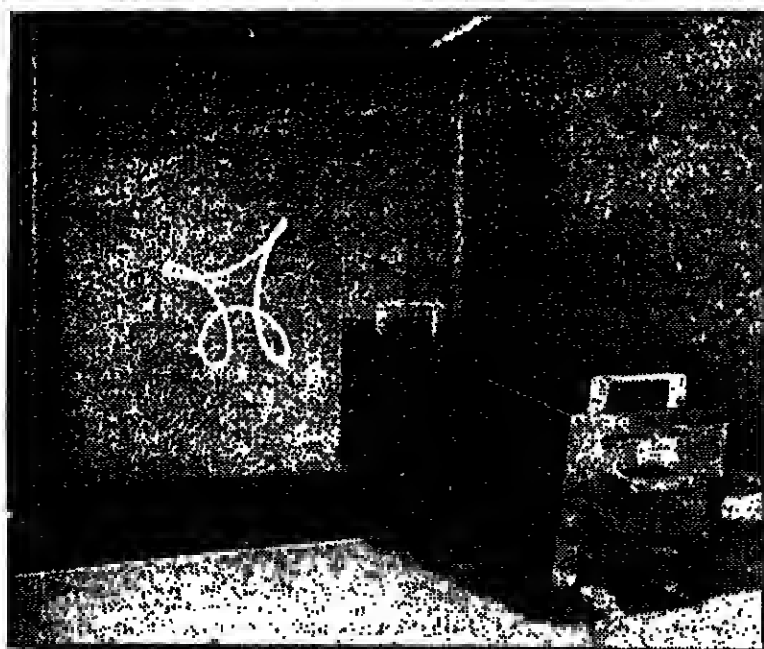
keyboard and mini-computer, is around £800.

Two companies were showing a wholly new extension of tape-slide technology, namely incorporation of a laser display alongside the slide projectors. In its "raw" state, a laser beam is very narrow, intense red or green light (depending on the laser type) and is passed through an arrangement of mirrors, any movement in the mirrors will deflect the beam. If the mirrors are powered by electromagnetic coils, in the manner of a laboratory galvanometer, then the laser beam can be made to trace out a pattern on the screen. If the trace is fast enough the pattern appears to be stationary. This is the basic of laser graphics, as for instance used at the Plancarium.

Probably the cheapest and simplest means yet of controlling a laser to produce graphics is now being offered by Sartre Audio Visual (32 Woodstock Grove, Shepherds Bush, London W12). For about £2,000 you get a low-power laser and a computerized control system which is triggered by tape signals similar to those used for a slide/tape presentation. The Sartre laser traces out the patterns on an ordinary slide/tape presentation to augment the pictures on screen with laser graphics. To keep the cost down the Sartre laser computer comes preprogrammed with a choice of over 2,000 different graphic shapes. Of these eight are pre-selected for any slide presentation and then triggered on and off by simple pulse signals recorded on the tape.

A much more ambitious, and inevitably far more expensive, system has been designed by The Incredible Products Company of the United States. This, the Magic Laser system, is being marketed in the United Kingdom by Mellanish (Woodlands Place, Alport, Wembley, Middlesex). The Magic Laser system can be pre-programmed by a skilled operator to produce virtually any graphic design on the screen. The system's galvanometers can follow trace signals of up to 35 KHz and do this, often moving at about 200 mph.

Three control signals are necessary and these are recorded on three tracks of a four-track tape recorder, which can be connected to a Teac. For the technically minded the con-



The Magic Laser System.

trol signals are analogue, but FM encoded. The need for digital control signals arises when artistic drawings, rather than abstract images, are to be traced on the screen. The Magic Laser system can be modified to cope with these if necessary.

At the other end of the display scale, several companies are now offering portable AV presentation units. A pair of projectors (almost always Kodak Carousels) are mounted alongside a cassette tape recorder, pulse programmer and microprocessor unit in a carrying case. Kodak themselves now offer just such a system, for around £1,500.

Schools unable to afford even the simplest AV Exotics will perhaps prefer to rely on overhead projection. Here SM have some interesting equipment which will enable teachers to produce a transparency from a printed original as easily as producing a photocopy. There are two transparency makers, which both look like video tape photo copiers. The cheapest of these, the 1648, will cost between £100 and £150 depending on source and is a dry photo system.

The more expensive unit, the M45, is automatic and produces finished overhead transparencies in four seconds. The machine, which relies on infra-red rather than visible light to make the copy, costs about £250, depending on source.

Two schools heavily committed to video, but so far deterred from editing by the high cost involved, REW (146 Charing Cross Road, London WC2) is importing a video editing machine from the Conver-



The Sartre Audio Visual Director 24 2-tape microprocessor-based multi-media system.

ILEA videocassettes available

by Carolyn O'Grady

Over 200 videocassette programmes originally made for London schools are now available throughout the United Kingdom and abroad. Most of them were made by the ILEA cable television service which stopped transmitting programmes to schools a year ago after a long debate on the economic justification for a local cable service.

Since then videocassette programmes have been made for contribution to London schools by the ILEA Learning Materials Service. They are being made available as an international basis following an agreement between the ILEA and the Central Film Library.

The video programmes cover a very large range of subjects. They include cartoons and magazine programmes for primary school children, material for special education, programmes illustrating scientific experiments, and a series of two-part exercises on the normal remote control sockets with a VHS format Betamax or VHS format machine which does not unthread the tape in the fast forward or rewind modes. While the tape remains locked round the video drum the control track is operative to maintain sync. A joystick control enables the operator to "rock and roll" the two tapes backwards and forwards until a pre-selected edit point is exactly reached.

Brief mention must also be made of the teletext and videodata (Cefax, Oracle and Pystext) demonstration given by Rainbow Video (Terry Gardens, Gosport) using a Mitsubishi video projector. Anyone looking closely at this demonstration must have soon realized that the signals were not arriving "off air" from the BBC or TV or on-off line from the Post Office. The signals were in fact arriving from a completely conventional audio cassette tape recorder. There is no real problem in recording videodata signals off a telephone line on to an audio cassette recorder for inter-replay through a videorecorder, because the raw videodata signals are simply coded sound signals of audible frequency. But it is more of a problem to record off-air because the signals are carrying very high frequency, piggy-back on television picture signals. Because of compromises adopted in all domestic videocassette recorders, a video recording of a television programme losing any teletext signals during the recording process. Of course, teletext signals arriving off-air are of far too high a frequency to record on an ordinary audio cassette.

So how were Rainbow replaying teletext from an audio cassette? They would say only that the system on display at Wembley has been designed with the aid of videodata inventor Sam Reddo and that it is still secret. The next generation of teletext decoders from several manufacturers will start to offer a special socket for just this purpose. This socket feeds into each peg of the teletext decoder memory at sufficiently slow speed for an audio recorder to tape it. To replay the taped pegs, the audio recorder simply feeds its recording back into the decoder memory at similarly slow speed.

The service was slow producing about 150 programmes a year from one colour studio. The 200 recordings which the CFL had on its catalogue was about one-third of those collected. But the CFL would continue to distribute programmes considered suitable for a wider audience as they became available.

Since September ILEA schools have had to pay for their own television sets, the maintenance of these sets and cassettes. At the time most schools were equipped with black and white sets which were coming to the end of their useful life. Eighty per cent of ILEA schools, and Mr Ryder, now bought colour sets and also video recorders.

The expense of the venture was the CFL, he added, would depend on teachers' willingness to pay for the purchase or hire of the tape. Purchase prices for one cassette between £35 and £45 depending on the video format (VHS, Betamax, U-matic or Philips VCR) and the cost for one complete term between £15 and £19.

ILEA schools at present pay substantially less than this and have to send money as accounts are credited or debited within the ILEA accounting system.

The CFL are counting on a large number of overseas sales and expect there has been a lot of interest in the programmes from abroad.

Introductory pieces

Brian Hill on schools language series

Fewer language teaching series are broadcast in the summer term, but there are five in the next two months which are worthwhile. *Inside Germany* (Mondays 10.45 VHF 4), for instance, has eight new programmes which aim to provide background information on the Federal Republic, largely in English. Many of the programmes use recorded interviews with German children introducing their country to their English counterparts with English children who are visiting Germany. This gives the programmes a welcome authenticity.

The new radiovision programme *A Visit to Offenburg* (May 12) is based on a study tour by pupils from Rushmore School in Sheffield and looks particularly good value. *Inside Germany* is accompanied by useful teachers' notes and pupils' notes. Some of the exercises are suitable for less able pupils, others, notably the essaywork, require a rather more sophisticated level of language.

Another new series is *Dobrye, druz'ga!* (Wednesdays, 9.30, VHF 4). Like its companion *An Introduction to Russian*, *Dobrye, druz'ga!* is a series of two-part exercises on the life of a Russian boy and girl and a black boy whose baby she is expecting.

A magazine format contains dramatizations, straight readings, poetry and songs. The fact of authentic insights aroused in the series by real live Russians might be missed, but I do like the device of using familiar stories such as *Alice in Wonderland* or *Robinson Crusoe*. The teachers' notes are invaluable, also they provide much more than the standard occasionally misleading summary of contents.

On television, ITV are broadcasting *As Travell* (Thursdays, 10.20) a series for older teenagers who might want to work in France. However, the level of language suggests the target audience is coming from universities or polytechnics, and the themes are beyond the experience of most teenagers.

The programmes are attractively filmed and offer imaginative suggestions; the teachers' notes carry useful addresses but are of little help for understanding the content, which is a pity since this might have made the programmes more accessible to a wider, younger audience.

A recent programme was about life in a *Chambre de Vacances* — a theme, picked up in *Salut les Jeunes* (Thursdays, 10.45 VHF 4). This series is about as modular as a series could be, providing within each broadcast two levels of language, and within each level two or three different sequences.

Some of the dialogues seem natural at times, but certain imitating devices such as sound-effect games work well. These involve the pupils more actively in the broadcast, and within each level two or three different sequences.

Members of the Dayle Alighieri Society will be pleased to see that *Appuntamento in Italia* (Wednesdays, 14.45, Fridays, 9.05, BBC-1) and its companion series *Encounter: Italy* (Mondays 11.40, Tuesdays, 14.14, BBC-1) are being repeated this term. The lingering and sympathetic picture of Italy portrayed in an earlier series, *The Italian Way*, has been reworked in fit with the needs of Italian learners.

The voice-over dialogues in Italian are appropriate for a broad range of learners, even at A level, and a script is published in the teachers' notes, but the subject matter remains very distant from the interests of most pupils.

Fagin resuscitated

Frances Farrer reviews children's drama series

A cardinal rule of children's literature, that the main characters shall be children and that they shall affect the action, is being observed throughout the current televised children's drama.

Beyond that, you might think there would be enormous scope for extraordinary adventures, but at the moment the series resemble one another to a startling degree. They are concerned with kids who are hindered by many adults and helped by a few, but who bravely get on and do what they must do, which is always something jolly worthwhile.

The *Further Adventures of Oliver Twist* (ATV, Sundays, 5 pm) is one of the most obvious examples of the genre. It has a lot again, including an impenetrable plot and a rock of foreign slang, yet amazingly it works quite well. Fagin and the Dodger have been resuscitated and Mr Brownlow has been dragged and incarcerated. The entire underworld is after Oliver. Mr Grimwig still threatens to eat his head (which the fellows by striking his white curls and releasing clouds of wig powder), and Oliver is as pretty, as blonde, and as wet as in the more recent big movie.

ATV boast "an extension of the novel as Dickens himself would probably have envisaged it," but it seems unlikely that even Dickens would have asked his public to swallow so many reformed characters, double-double-crosses and bits of pretty moralising. There are also uncharacteristic such as gurgles, hissing, jinking, hissing, and hissing, which Dickens' skill with the cliff-hanger and his concern with social conditions have not survived.

Despite all this, and it is a great deal, *Further Adventures* are sometimes quite fun. Many of the characters still have Dickensian colour and force, several still say "wot" for "what", as in "wotry

witness", and the rapport between Oliver and the Dodger is at least as good as in the movie.

The BBC's Sunday children's slot is the province of the adult drama department, which seems to show a preference for inappropriate, if pleasant, productions like *The History of Mr Potty*, which apparently in show motion through a filter.

The Swiss of the Curtain (BBC) finished last Sunday. It was set somewhere in the late 1940s/early 1950s, among the comfortable middle-classes. In it, the Bell children form a theatre company and become increasingly stage-struck, which infuriates their stiff-necked father and maddens the snobbish Mrs Pooter-Smith.

A common complaint to the children-as-heroes pattern can be mounted as the minutes-as-bombers. In series such as *The Famous Five* (Southern) and *Oliver Twist*, the adult bouncer is a genuine original, but in *The Swiss of the Curtain*, the bouncers are the kids' parents and other pillars of society. It is not until nearly the end of the series that we discover that Mr Bell's unfathomable opposition to the theatre company stems from his discovery, before their wedding, that Mrs Bell cared more for her ballet career than for him.

Thames have been repeating *Ray Martin* (Fridays, 4.15 pm) which is much stronger on destiny than on self-assertion. Martin is being brought up by an honest blacksmith and his wife, who are full of commonplace concerns, but is imbuing magic from his foster-grandmother, a potent old seer who sits by the fire.

Sparsely there are Welsh oenies, trips to see the King, sci-fi influences and even magic. With the exceptions of Ian Rowlands (Merlin) and Rachel Thomas (grandmother), it is a waste of time.

Briefings

Radio and tv

Is There Life After School? (Monday, 10.10 BBC 1)
Four programmes on affairs in bridge the gap between school and work.

For schools

My World (Mondays, 9.30 ITV)
"Covering Surfaces" explores some problems of multi-pairing, pastry-making and bandaging, for infants and lower juniors.

Exploration Earth (Mondays, 14.00 VHF 4)
A unit on "School Talk" to introduce 10 to 12-year-olds to geographical concepts.

Going to Work (Monday, 11.40, Friday, 10.35 BBC 1)
"Overcoming Handicaps" features the success of some young people who have coped with various disabilities.

Television Club (Tuesday, 11.17, Thursday, 14.40 BBC 1)
Tudor Month shows 12 to 14-year-olds learn how to enjoy a lion's visit by taking simple safety precautions.

Look Around (Tuesday, 11.22 ITV)
Ten to 12-year-olds look at the development of road transport.

Days that made History: Twentieth Century (Tuesday, 14.20 VHF 4)
Five programmes on British social and economic history, based on events between 1926 and 1974. This week, "The General Strike".

History in Evidence (Wednesday, 9.05 VHF 4)
Eleven to 14-year-olds study Elven.

Music Round (Thursday, 11.05 ITV)
"Music for Films" traces the development of the use of music in the cinema *Exploring Science* (Friday, 11.40 BBC 1)

Eleven to 13-year-olds investigate "Electricity".

Living Language (Thursday, 14.00 VHF 4)
A three-part story to encourage creative imagination in 9 to 11-year-olds. "The Day the Last Dinosaurs Died", by David Pownall.

BBC Annual Programme Radio and Television for Schools and Colleges New Series 1980/81

Radio	
The Song Tree	Age 6 and over
Maths - with a Story!	Age 8-10
Living Through History	Age 11-14
Soundtrack	Age 11-14
Home or Away	Age 13-14
Music Projects	Age 13-16
Case Book 81	Age 13-16
Life Time	Age 13-17
O-Level Religious Education	Age 14+
Teenage Playhouse	Age 14-17
Multi-Cultural Resources	Age 14-17
Study Skills	Age 14-17
Cuentos y chistes	Secondary

Television	
Mind Stretchers	Age 10-11
Read On!	Age 10-12
Today and Tomorrow	Age 11
Maths File	Age 11-13
Encounter: Spain	Age 12-15
Descubra España	Secondary
Capricorn Game	(For children with special needs)

It may prove necessary to delay the transmission of some of these radio programmes until 1981/82.

Details of next year's programmes and publications are in your school now.

Send your order by 4 July to
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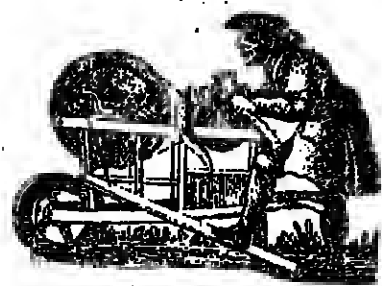
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Kenyan case-study
Two recent slide packs from the Centre for World Development, each containing 20 slides and ten teaching notes, are titled: *A School in Kenya* and *Our Cup of Tea*. *A School in Kenya* is compiled by Alan Pocock, describes a Kenyan primary school.
Primary education in Kenya continues until the age of 13 or 14. The notes demonstrate the difference to educational opportunity between the developed and developing countries and give general information about development in Kenya itself. Notes are given on each slide, and there is a section of supplementary notes for teachers.
The pack illustrates the shortage of basic teaching resources taken for granted in British schools. Kenyan pupils make over their own desks in school.
Our Cup of Tea, also contains 20 slides, is about tea plantations in Kenya and the international tea trade. Compiled by Hugh Stanley and Margaret Haynes, its accompanying booklet contains teaching notes and information on each slide.
Each pack costs £4 plus 60p p.p. by air. *Tea* is available from the Centre at 128, Brompton Road, London SW19.

BBC Education 1980/81
for Schools and Colleges

talkback



Axegrinder Rough cuts

The extraordinary sartorial conservatism of the British never fails to amuse me. Recently one may have discerned some liberalisation in the "declining standards" (depending on one's position) in that women teachers were to be seen in

trousers at work, and latterly in jeans and even "dunings". Their male counterparts have cut off their ties, worn open-necked shirts and denim. Some school teachers went as far as to appear in the same sort of clothing favoured by their teenage pupils. But deep down one was aware of a certain unease.

In spite of (too?) frequent reference to "moving with the times", came, somewhere, a harboured disapproval of this symbolic relaxation of a deep cultural structure. To a degree, collective disapproval has surfaced in the consumer magazine *Which?* of March, 1980 (Dress up or dress down? Clothes to wear at work).

People in general it seems have pretty rigid and conventional notions about the appropriate clothing for work. School uniforms and trousers are the right thing for men teachers ("May be just acceptable for behind-the-scenes staff" - bank manager), and, moreover, in the exception of stiff who were

"creative or difficult to come by" (that is, designer, architect, computer staff, but not school teachers; how did you guess?). The way you dress is thought to affect not only chances of promotion but also suitability for holding responsibility. "Looking the part" seems to be so much a part of career success, that we should perhaps concentrate upon appearance rather than actual performance. Aspiring heads, take note.

Not long ago I found myself in a suburban secondary school in Surrey. Deep in the chinks of the Common Room (sic), I remarked on the orderly way the immaculately uniformed teenage pupils were entering the school gates. There on bikes dismounted and wheeled them to the sheds, chatting quietly to their friends on the path.

None of the yahoos of my ideal city stampeding grain, shouting, lighting, snaking and labbing books and bags around. Yes, said the deputy head, we like to keep up

appearances, and only the other day I had to send a student teacher back to college not to reappear until shorn, washed and properly attired.

I later found out that this young man had decided to conform with a vengeance, and had decked himself out with greeny tweeds and tie, checked V-neck shirt and oxford brogues. He returned wearing a Sherlock Holmes deerstalker as well and set puffing a large curly pipe over the *Daily Telegraph*.

The school was scandalized afresh and once again sent him packing. This time for having the "wrong attitude". I should add that at the time the school was a mixed secondary modern.

The *Which?* article adds further contradictions. Despite a strongly supported view that "people work best in the clothes they feel most comfortable in", it was also equally important that "people should not be allowed to wear exactly what they like at work". So if you want to get on, you'd better find out what clothes some sartorial despot in

education approves of and get the fortable in them.

Trousers for women are also inadvisable in this respect. Be obvious practically in the classroom notwithstanding. But no heeds complaints from teachers (even of infants and of many subjects) that some schools will sit on skirts or dresses. Tights with other disadvantages of today in such educational backwaters added the need to acquire a section of "teachery" garments: of point, blue, clay, and so on.

In the days of the monarchy came across one set of teachers wearing their way over trousers by being they'd had enough of the evening when they wrote on a blackboard, and if the head in on skirts he was a dirty old man. But the *Which?* response, seem to be on his side, and apparently is the law.

Axegrinder will be an occasional contributor to the Talkback page.

Stephen can walk

Jean Root

Our school is ESN(S), the children attend daily and I take the infants class, which consists of nine children with assorted handicaps between the ages of five and seven years.

Stephen arrived in September; a talkative, partially sighted, doubly incontinent, retarded little boy of just five years, with his leg in plaster. He had never walked and had recently had an operation to extend the tendon in his heel.

His parents said he could "get around" holding the furniture but mainly used his knees. The latter he demonstrated, at once, going back and forth at high speed like some miniature Toulouse Lautrec.

On the physiotherapist's advice, propulsoo by knee power was frowned upon, where furniture was not available he used a small box crumpled walking frame. It became quite confident, stomping and leaning heavily on his crutches.

Towards the end of October his plaster was removed, and with it went his confidence. His nice new shoes did not help at all. We were told that he would perhaps walk by himself or on his crutches, but he clutched desperately at the time to the nearest solid object, and his walking frame.

Walking progressed, and he was now dry at school anyway. He was talking so happily into our classroom that, apart from seeing that he did not use his knees, and



A handicapped child watches his more fortunate classmates in an ordinary school.

to watch his turn. His screeching demands for immediate attention during the first few weeks quickly disappeared. But he did want to jump, he did want to run, and above all he did want to walk. He was a walking frame, a walking frame, a walking frame.

However, it was only four weeks since that plaster was removed, and he was talking so happily into our classroom that, apart from seeing that he did not use his knees, and

was not really doing anything except see that he was included and given time to join in everything. Friday morning came. We put our chairs in our usual semi-circle and I got out the guitar for "sing-ing". Stephen absolutely loved playing the guitar, and he was playing it, and he was playing it, and he was playing it.

One little girl then wanted to get up but I asked her to sit quietly for a little longer, so she bowed her head. Concentration is very difficult for our children, and although she might well have had enough, the

Fishing on the timetable?

Tony Howarth

We have this little boat on the Oxford Canal, at the bottom of our garden. On busy summer days, we can sit on the bank and watch the boats go by, and the boats go by, and the boats go by.

There are remarkable sights in the river. A kingfisher in a nest-box, a cormorant in a nest-box, a cormorant in a nest-box, a cormorant in a nest-box.

You begin to notice them now. Among reeds in a corner, a kingfisher, a kingfisher, a kingfisher, a kingfisher.

They multiply with noticing. You cannot get away from them. There are kingfishers everywhere. Are you with me? They have been with me since I set off. There are kingfishers everywhere. Most noticeable, there are kingfishers everywhere.

Among the kingfishers, there are kingfishers, there are kingfishers, there are kingfishers, there are kingfishers, there are kingfishers.

So what? Well, you have football (or its rugby equivalent) on the timetable. I believe there is a case for having angling there too. Angling is the most popular of all outdoor pursuits, not a minority activity like cricket. It requires no capital expenditure on pitches, posts or pavilions, nor current charges for the upkeep of groundmen. It needs no showers or showers, nor bins, nor bins, nor bins.

meets of Adonis or Admiral. Nor does it require a member of staff to turn up for practices. Ergo, it is neither capital nor labour intensive, and pupils will pay for their own equipment out of their own pockets. What more could you want in this day and age?

Where might angling feature in your school's scheme of things? Well, its humble role would be as an alternative to those traditional "games" that enthrall a few, occupy most, and arouse a substantial minority either to civilised disobedience or outright mutiny. But I, like Walton, have visions of more complex games.

Try these propositions for size. In the "mudlark" of "techie", the fourth and fifth years, "practical" options of woodwork, metalwork, cookery, parentcraft, etc. To my mind there is nothing about a pair of mismatched socks and a pair of mismatched socks and a pair of mismatched socks.

Dr. Fusa "games" and a "practical" option into a one or two-year angling course which would combine the manufacture, care and repair of equipment with the actual business of catching fish. Of course, for those schools that have a disorganised integrated studies

in 1970s, there would be real opportunities to make use of anglers' enthusiasm in many of the subject disciplines.

Of the spin-offs might be matches between schools in a sport which does not involve children kicking lumps out of each other or the use of "practical" headgear. Local angling associations would probably be willing to help organize city and county championships; and at the peak and summit of youthful ambition would be a national tournament, fished on one of Britain's great rivers.

Up river, not far from Oxford, lies a backwater that is an anglers' and a trout-lover's idyll. There are trout, waterfowl, pole, heron, swan, kingfisher, and where there are trout, there are trout, there are trout.

And if that is not incentive in itself, I do not know what is. Tony Howarth, a regular TES contributor, wrote this piece while on a fishing trip in the Cotswolds.

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Domestic Subjects

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extra

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At the Dorothy Purcell Primary School, Walsall, a group of children work together on a school magazine project.

STATISTICS IN YOUR WORLD

By Peter Holmes, Director of the Schools Council Project on Statistical Education

This Schools Council project was set up in October, 1975, to assess the current situation in statistical education for 11 to 16-year-old pupils, relate this to the position of statistics in the curriculum, and to consider the implications for both initial and in-service training of teachers. An account of the early work of the project appeared in this journal in 1976.

Statistics is a practical subject devoted to the obtaining and processing of data so as to be able to draw inferences, make estimates, and to make other statements which often extend beyond the data. Data

also in many contexts. Statistics is an interesting, relevant and practical subject which is widely used in our society. Since one of the general purposes of education of pupils aged 11 to 16 is in preparation for the world in which they have to live, one component of their education should be statistical.

Given a cursory glance at newspapers and journals indicates the breadth and type of statistical thinking the citizen of today is expected to cope with. Behind many references to wage claims there lies the idea of an index to measure changing costs; political decisions such as whether or not to make the west-

being called a bar chart in one subject and a histogram in another end with the pupil given different standards of statistical technique and definition in two different subjects.

A deeper problem is that the statistical work is often largely incoordinated and greater levels of statistical expertise are required in one subject than in another. Occasionally, the depth of statistical understanding required may not be recognized and the necessity for appropriate background experience not appreciated. An example of this occurs in 'some geography courses which require the calculation and use of rank correlation coefficients with perhaps only a limited background of work on distributions and variability. The opposite problem also occurs with a subject teacher not referring to simple statistical techniques within the scope of the pupils' understanding and using them effectively to increase insight into the user subject.

In most schools the responsibility for coordinating work in statistics across the curriculum and ensuring that each pupil receives an overall coherent experience in statistics rests with the mathematics department since mathematics is the only subject concerned with developing numeracy which is taken by all pupils. This puts quite a burden on the mathematics department and highlights one of the important differences in statistics to statistics 'between' that shown by the mathematics and by other subject specialists.

The mathematics teacher tends to emphasize the mathematical techniques used in statistics and is often less concerned with the problem of collecting and interpreting data, whereas the other subject teacher sees statistics as one of the tools to use in giving a greater understanding of and insight into his own subject. In many schools the lack of a coherent scheme behind the use of statistics across the curriculum leads to some applications which are important for citizenship being neglected or omitted. It is against this background that the work of the Schools Council Project developed. Since there was clearly a shortage of material that took practical, relevant problems as starting points and developed the appropriate statistical techniques in context, this was the attitude taken by the project team.

SKILL GETTING AND SKILL USING

By Ann Floyd

One of the perennial problems of the mathematics educator is the difficulty which children often have in making use of such skills as they possess in order to solve problems.

Recent evidence of this comes from many sources, such as the Schools Council survey *Mathematics and the 10-year-old*, and the APU mathematics report. Both of these reports are concerned with children's performance in situations which they have been told are mathematical. When they have not been told, as in the science or geography classroom, for example, or in their own school, the chances of their seeing the relevance of their mathematical skills and then putting them to effective use are even less. It is as if the things that they learn are conceived of as being completely unrelated to each other, so that the knowledge they possess is fragmented and compartmentalized.

The general aims behind the teaching unit are that through them children should come to appreciate both the breadth of statistical applications and the power and limitations of statistical thinking. A total of 27 different units were written and tested with children of a wide range of ability in 55 trial schools throughout the country. It was only after evaluation, revision and retesting that the final version was prepared.

The breadth of applications to composed includes units on quality control, smoking and health, the brewhouse, the population explosion, the national census, the capture-recapture method of population estimation, designing games for the school etc., distinguishing between the writings of two authors, the Equal Pay Act, designing and using questionnaires, predicting the results of football matches, premium bonds and misleading advertisements.

Although, taken together, the 27 units could form a useful course in statistics, they can also be used separately as a resource to supplement and enhance the teaching of statistics in a wide variety of subjects (including mathematics). Each unit spells out the statistical prerequisites required before work can begin but these prerequisites are kept to a minimum.

As well as putting the teaching of statistics in context, the teachers' handbook shows how the units fit together and also includes a detailed hierarchy of elementary statistical concepts and techniques so that any teacher wishing to use a particular concept can see what preliminary work is necessary. The first eight units and the teachers' handbook will be published shortly by Paulsen Educational.

Currently the project is setting up regional centres, running in-service courses and working to provide extra material to help teachers who are trying to coordinate the teaching of statistics across the curriculum and to encourage interdisciplinary cooperation. Further details and a newsletter are available from the project offices at the Department of Probability and Statistics, the University of Sheffield.

process of making sense of a spatial distribution and they are the same as those suggested for Fred and Wilma above. At the end of the lesson, the class agreed that Jonathan's plan was more explicit than their written piece. The teacher went on to stress the benefits of working in this way and encouraging children to use diagrams in their problems. I have found that many are now far from hesitant about using diagrams, and in fact enjoy it. If children of this age can be encouraged in this way, I feel that the gap between skills will naturally follow.

It seems as if this approach to mathematics across the curriculum has something in it for everybody.

John Baker is a lecturer in mathematics at the Open University and chairman of their Mathematics Education Group.

example above. Hence the teacher has to find ways of fostering both modelling and manipulative skills, for adequate 'skill getting' must involve both of these if it is to genuinely facilitate skill using.

The lower link in the diagram expresses the belief that wanting to find an answer to a problem is a considerable incentive to acquire the relevant skills. Brian is a good example of this. Brian's class was engaged in a campaign to convince the local education authority that they should reinstate the lollipop reduction. They were quite sure themselves that this should be done but needed some hard evidence in support of their case. Brian, on the other hand, was still not sure that he had done a survey to establish how long children took between arriving at one side of the crossing and reaching the other side. Brian and some other children had repeated the survey in the absence of the lollipop man, and now wanted to compare the two sets of data with a view to demonstrating the contribution he had made. The data was in the following form:

time (seconds)	number of children	1st survey	2nd survey
1	0	0	0
2	2	5	5
3	4	4	4
4	4	3	3
5	5	7	7

To compare the numbers in the two surveys, the children 'saw' the data in the two columns and simply looked at the actual numbers in the two columns, because there had been four more children in the second survey than in the first. Some of Brian's classmates thought

that the would-be solver must already have learned a formal procedure for adding money. In addition to this, he must also have acquired a good intuition as to the comparative size of himself, because he really cared about his outcome, that he might assist with a previously been both uninteresting and unintelligible.

What is more, thanks to this strong motivation he really came to understand percentages and produced a comparison between the two sets of data that was satisfactory and convincing both to him and to the authority. Brian's involvement in this problem he had not only increased his grasp of what percentages are and how they can be calculated, but also acquired more of a feeling for the kind of situations in which they might be useful. In other words he had improved both his manipulative and his modelling skills.

Mathematics teaching must therefore 'account' for the links in the diagram. It must find a way of capitalizing upon the motivating power of interesting problems and at the same time ensuring that the skills appropriate to a solution of such problems are acquired as a by-product of the process.

At first sight this may appear to be an insuperable difficulty here, because it could easily be argued that the relevant skills have to be taught first, and that the problem solving should be a separate application thereof. The fallacy in this argument is that it assumes that the only valuable solution to a problem is the one that is the neatest, and most elegant of available solutions. I would argue that the process of constructing some sort of solution, however inelegant can be a powerful learning experience in itself, and that it can be one and the same time be taking the learner along the path to more sophisticated procedures and also fostering his interest in the whole enterprise.

Let me illustrate what I mean in relation to the word problem mentioned earlier on. In this context the argument that necessary skills must first be acquired would mean

Structured Mathematics

A J Fletcher
Deputy Headmaster
King Ethelbert School
Birchington, Kent

Helen Faulkner
Head of Mathematics
The Conyngham School
Ramsgate, Kent

This important new scheme attempts to come to terms with some of the notable difficulties that may be encountered in secondary school mathematics. It has been written for the 'Middle Ability Band', and is intended for introduction at the beginning of the third year. It can also be usefully used in its early stages for pupils with learning difficulties.

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"Something for everyone" continued and (for the learner) repeated experience of the full cycle will, I believe, lead to the attitude that mathematical thinking really does have something to offer.

To summarize, I would suggest that mathematics across the curriculum means holding children to clearly their purposes (this should hold true for all mathematics) and so structuring lessons that children experience the full cycle of mathematical modelling (which helps them to see how to use mathematics). Both aspects are presented in the materials which will be used across the curriculum only because of the extra power it can bring to the understanding of other subjects.

I would like to end with an example from the classroom. A year 5 class who were working on the development of the Open University course reported on their work with a class of 8-year-olds. She began by establishing a clear purpose: "In a topic lesson we had discussed the Age men's needs and the minor in which he lived. There were various key words on the board such as hut, water, animals, etc. The exercise for the children was to describe a typical New Stone Age village."

In this lesson, the large majority of the children simply wrote about the appearance of the village. Only Jonathan asked if he could draw a plan. In doing this he went through the following process:

- Identify the problem elements (which things needed to be included in the village);
- Sketch out the links between them (water should run next to the huts, animals should be enclosed in pens);
- Construct a suitable representation (draw a plan of the village);
- Interpret (write accompanying notes).

These steps are those that had been identified in the course for the

extra PROBLEM SOLVING IN THE JUNIOR SCHOOL

* Since the problem had to be real to the children then clearly the children had to be asked.

By Sid Hargrave

In the summer term the Walsall Education Authority and the Open University ran a joint in-service course: "Problem Solving in the Junior School" as a pilot study for the Open University "Mathematics Across the Curriculum Course". The course was comprised of three tutorials and a two-day residential school, the former being tutored by the Walsall Mathematics/Science Unit staff and the latter by the Open University Course Team.

The Real Problem Solving Study occupies what might be described as middle ground, being neither strictly a subject area nor a really definable piece of mathematical content. It is concerned essentially with general thinking processes; namely: planning, measuring, making use of space; seeking out relationships; taking decisions; representing for understanding; and aims to illustrate, in the process, that mathematics has the power to explain. Thinking skills are, of course, needed right through the curriculum and not limited by subject boundaries.

Following the two-day residential school the 28 participants, all of whom were head teachers, deputies or probationers, and in most cases attending as a "pair" from a school, felt enthusiastic and stimulated. It was evident that Real Problem Solving possessed significant potential for nurturing investigative skills. General language development, particularly oral and social awareness. However, considerable doubt was expressed in relation to the mathematical possibilities such a project might yield

and the likelihood of genuine problems being identified.

The concern about problems was easily resolved. Since the problem had to be real to the children then clearly the children had to be asked. One head teacher consulted a class of fourth year children and they provided 24 problems, all of which satisfied criteria for judging a real problem.

It should have immediate, practical effects on children's lives. It should lead to some improvement of the situation by children, in other words, it is actionable. It should have no known solution. It should require children to use their own ideas for solving the problem.

Is it big enough to involve the whole class over a period?

The problems tackled were varied and included the following topics: planning, visits, school gardens, safety, lockshops, use of space in the classroom, playtime, cloakroom overcrowding, school meals, producing magazines, safe places to play, litter, sports day, walking to bus stops, games fields, etc.

Throughout the project the teachers and children used the acronym PROBLEMS as a device to tackle the messiness of "real problems".

Pose the problem. Refine into areas of investigation. Outline the questions to ask. Being the right data home. Look for solutions. Establish recommendations. Make them happen. So what next?

Early stage of the acronym had a series of self-organizing questions, for example, "outline the questions to ask" required the children to consider: What question do we want to ask? Would the answer help us to solve the problem? Would we be able to find the answer? This process, of course, is the process we, as adults, use when tackling a problem.

In order to assess the mathematical potential it would perhaps be beneficial to focus on two of the projects.

The first project concerned justifying the continued existence of the school tuckshop. The tuckshop had become time consuming, for staff, created litter in the school grounds and yielded a return not commensurate with the effort involved. An initial "brainstorming" session was held, where the problem was posed, and then refined into areas of investigation. In all, eight areas were identified and children heaved away in small groups investigating aspects such as:

How many children use the tuck shop? Number and variety of articles sold. Likes and dislikes. Storage and stock. Queuing time. Spilling habits. Litter problem.

Staff time commitment.

Interaction between the whole class and small groups was vital, not only in exchanging ideas and information, but in order for the groups to consider how their work contributed to solving the problem and to decide what further investigations were needed.

By the time that the children were ready to bring the data home the mathematics really began to emerge. In analysing and interpreting statistics the children were found to be sorting, classifying, counting and using the four rules of number. Pictorial representation was much in evidence in the form of block graphs, networks and plots. The children were using mathematics with enthusiasm.

Groups were wandering round the school measuring stockrooms, cupboards and estimating areas for storage, others were huddled around calculators, and mathematical graffiti appeared all over the blackboard. I remember well one 10-year-old saying: "I enjoy being my friend instead of a book."

The children were not only consolidating and reinforcing skills already learnt but at times found it necessary to acquire new skills in order to accomplish their objectives. The group working on likes and dislikes, for instance, found that their original plan of surveying every child in the school was unworkable. They simply did not have enough time, and additionally the infants were found to be quite unreliable when it came to a show of hands. They thus were introduced to a concept of sampling and were able to complete their work satisfactorily. Other groups needed to understand percentages, averages, and ratios in order to complete their tasks. The children were eager to learn. Mrs. Miller, who was the head teacher at the time, said: "The children were highly motivated, towards learning new mathematical concepts."

Recommendations made by the groups showing ways of improving the school, reducing queuing time and increasing tuckshop grounds led to the renovation of the tuckshop. The second problem was concerned with making playtime more enjoyable. This was a somewhat surprising source of project but the children's "brainstorming" strategy showed that anytime would be sessions of conflict and disagreement.

The school had a large and a small playground. Two climbing frames and a hop scotch marking were placed in the large playground, the small playground was for ball games and the small playground was either close to the gardens or neighbouring houses.

Some of the children were asked: "What was wrong with the large playground? What was wrong with the small playground? What was wrong with the small playground?"



Sid Hargrave in consultation with a pupil in a Walsall school.

large playground? What was wrong with the small playground? Making the plans of existing and improved areas. Surveying opinions as to needs.

The children designed a questionnaire, something they had not done before, and collected relevant information. Once again the skill of setting, skill using cycles was seen to be operating. The children were consolidating and reinforcing such skills as sorting, classifying, estimating and measuring, while the problem also demanded development of new skills such as averages, scale drawing and working out volume.

The recommendations, all of which the children were allowed to action, were illuminating. The two climbing frames were moved to a grassed area adjacent to the small playground. Ball games were restricted to the large playground now free of obstacles. The children

planted a new hop scotch court along with other markings on the small playground. A sand pit was dug, the soil being used to make a hill for model car games, and sand was purchased and wheelbarrowed around the building to complete the improvements. In all, playtime was made more enjoyable and mathematics had been needed and used to lead to a happy solution.

The real problem solving projects more than anything else showed that children were able to grasp the relevance of what they were doing and this indeed seems to me to be the strength of this approach.

Sid Hargrave is Advisory Head Teacher for Primary Mathematics, Science, Walsall Education Authority.



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extra THE VIEW FROM INDUSTRY

'One wonders how the reported lack of skills is really lack of ability to use knowledge outside its usual context,' writes Peter Cofker

As a member of a number of educational committees I have taken part in several debates on the requirements of industry, especially the mathematical skills expected in young employees. My contacts with teachers through attending subject association meetings, with my own company's schoolteacher fellows and others have given me many insights into a problem within schools. The combination of these experiences has enabled me to formulate views, which are necessarily personal and may not correspond with those of my company or of the other bodies which I represent.

It has often been stated that employers require their recruits to be:

- Literate: To be literate implies the ability to be able to read instructions, in order to carry them out correctly, and to be able to write reports on what has been done.

- Numerate: There has been much discussion recently about numeracy, but many limit their comments to ability in the four rules of arithmetic. Indeed many tests examine only this element, although it is far more important for there to be a good understanding of what to use these rules and how to apply them to everyday problems.

- Trounble: The rapid developments in technology require all employees to be flexible and capable of being retrained for new jobs in the future.

- Able to communicate and work with others: In employment, the majority of workers do not operate alone, but work in groups. There must be communication between the members of the group and this implies the understanding of the language used. Some industries have their own peculiar jargon or terminology and this must be learnt.

- Willing to take responsibility: Even the lowest worker is expected to take decisions, to act confidently and to be able to take the consequences of that action.

One asks whether the present system of education and examination prepares the pupils to meet these criteria. Each subject is contained within its closed box and there have been several cases of pupils' unable or unwilling to

transfer knowledge from one subject to be used within another. One wonders how the reported lack of skills is really lack of ability to use knowledge outside its usual context.

Turning specifically to the subject of mathematics, I would like to see a realistic illustration of its application to realistic problems. These may be from any part of adult life, as soon as the pupil is capable of understanding the object and context of the problem. The subject areas in school, at earlier stages the context may be from the pupil's own world, and some excellent examples are included in the material of the Open University PME 233 Course.

Suitable resources, available shortly to be published by the Working Mathematics Group. These 30, volunteer teachers, half from the world of work have produced modules on living with interest, life assurance, the geometry of the telephone pole, dredging a harbour, designing a yacht and minimising transport costs to mention just a few.

Immediately one can hear the cries that the examination syllabus is already too full, and that no time exists for deviation, no matter how good a cause.

This leads me to query the present examination system. Because of the demands of the universities, the academic in content, I do not object to this as there is a need to identify the academically bright who will benefit from a university education. However, one still asks whether the training for these suppresses the lateral thinker, who thus is prevented from becoming the engineer or applied scientist so badly required today.

An opportunity to move away from 'academic' assessments is afforded by the creation of the CSE examinations. Unfortunately, the teachers involved had themselves experienced only 'academic' style tests and so the majority of CSE papers are mirror images of the GCSE. It is feared that the merging of CSE and GCSE will perpetuate this trend.

To meet the requirements already stated, teachers need to be encouraged to involve their classes

in group discussions of open-ended problems. Some teachers may feel so insecure in their subject that they are afraid to embark upon such a course in case they demonstrate their own ignorance. On the contrary I know excellent teachers who are only too willing to embark upon discoveries with their pupils to the mutual satisfaction of all. In June 1979, the Design Council published an excellent document Design Education at Secondary Level. In this they state, a design course should:

- foster creativity and encourage individuality;
- encourage an approach that combines synthesis and analysis;
- the solution of real problems;
- impart a knowledge of the behaviour of the materials or systems elements and the production processes involved;
- involve design, illustration and application of knowledge obtained from other subjects which the pupil then sees to be relevant in design;
- involve the use of models, whether drawing, sketching, constructional or mathematical, as a means for expressing and testing ideas;
- provide an opportunity for an activity that involves not only thinking about design, but making and testing a solution;
- require an evaluation of what has been achieved;
- require communication to written or graphic form.

This shows how design projects could incorporate topics from several subjects, including mathematics, physics, properties of materials, and, even require research into history or geography. This type of work cannot be confined to design. I would very much like to see work done by groups of, say, four children on such lines in which each student could make a contribution to the solution, access resources would be encouraged.

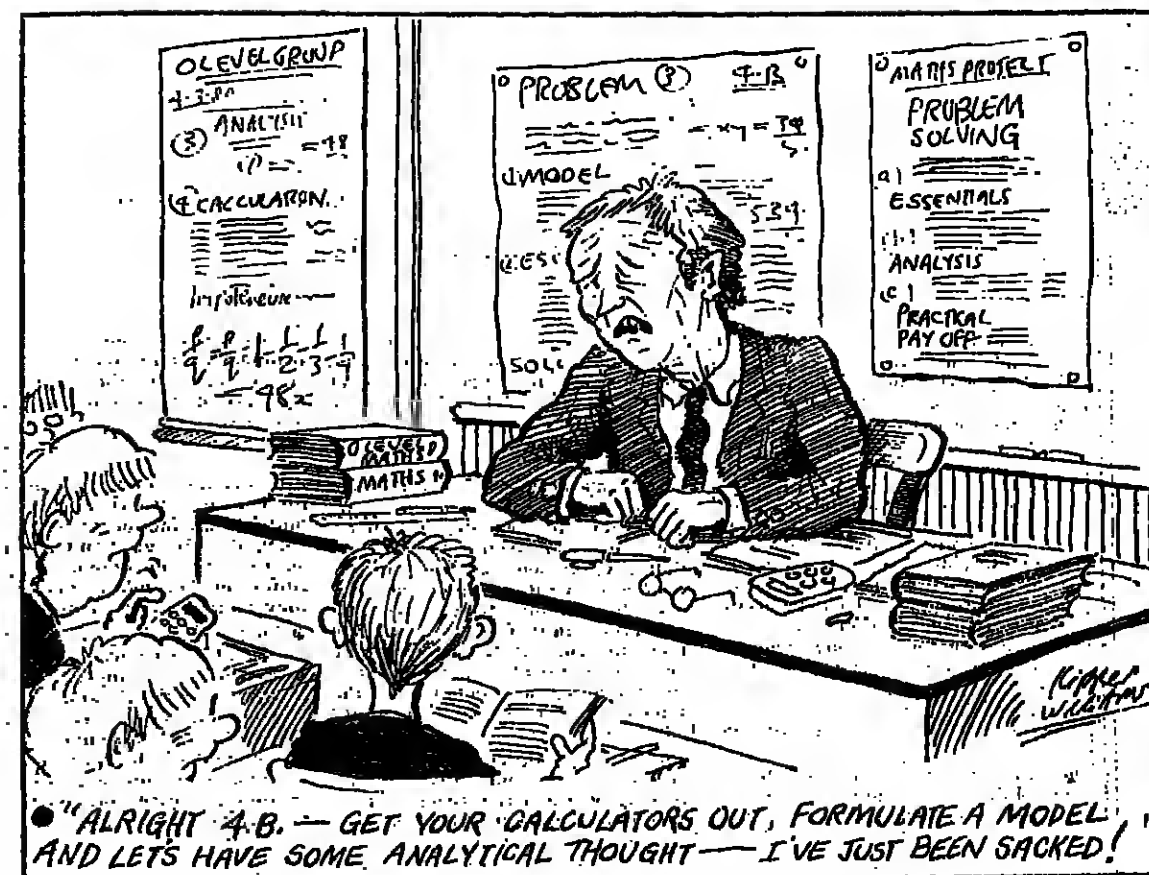
Each student would be required to write a detailed report on the work done, concentrating upon their own contribution. In addition to the written report, and the finished product, the student would be required to make a verbal exposition of the work done. Both written and oral presentations should be assessed by representatives of employment or educationalists.

It is a pity that assessment by projects and other examples are not afforded by the television competition and others. The Operational Research Society has an annual competition for schools for the best 'management' project. These are 'project' studies, all demonstrate what pupils can achieve given a suitable challenge. The difficulty is finding the subject matter for the study. To this, and I would like to suggest, suitable topics may be found by studying the operations within small local industries.

Initial contacts should be made by the teacher, and the possibilities researched with the firm. To assist in this some assistance may be required, experts from sympathetic larger firms. These all studies may benefit the firm as well as the students. Again, assessment of the reports should include the management of the firm.

If these styles of testing become an element in our examination system, then the barriers between subjects will be lowered and there will be much more teaching across the curriculum. This can only benefit the creation of lateral thinkers, the enterprising and inventors that are required to return this nation to its place among the leaders of the world. I am sure that the natural vigour and inventiveness of the young can be developed successfully by the use of these methods.

The answer to these questions happily seems to be 'no'. Ways of helping children to learn to tackle effectively problems of concern to them have been developed. One approach is described in this issue by John Baker and by Sid Harcourt. I want to look at this essential ingredients, and at some of the problems they present to some teachers, in the form of the following 'suggestions to a teacher' who might like to try them.



USING OUR MATHEMATICS

We spend a lot of time in school learning maths but most of us use hardly anything we learnt after primary school in our daily life or work. Could we do better? asks Hugh Burkhardt

Mathematics is well known to be a powerful aid in solving problems—putting a man on the moon, getting pollution out of the Thames, making a casino pay, working out a rate for employing dubbers, designing a television set or constructing a school timetable.

In these and a myriad of other challenging problems, mathematics provides a language in which they can be clearly expressed, allowing the construction of mathematical 'models' which mirror the essential nature of the situation. The model can then be studied relatively easily and cheaply, and developed to provide insight which leads to better decisions and to provide arguments to justify those decisions.

Such is the power of mathematics—and yet most children will not use any of the mathematics they learn in secondary school to help them tackle problems of concern to them in their adult life or work.

When they face 'real' problems, such as, 'I can't do my homework because I keep on watching television', or 'Should I get a motor bike?', it is unlikely, to say the least, that they will use any of the mathematics they have learned.

This is not surprising. Real problems like these do not 'look at all' like the artificial questions we face at school and they require a wider range of skills, including common sense, to make progress. Mathematics is only part of the toolkit and you must learn how to use it, which is not all that easy.

In the present situation inevitable? Is real problem solving too hard? Must the thousands of hours which each child spends in studying mathematics be justified only by 'training the mind' and by the aesthetic fascination of the subject, which many children fail to get much satisfaction from?

The answer to these questions happily seems to be 'no'. Ways of helping children to learn to tackle effectively problems of concern to them have been developed. One approach is described in this issue by John Baker and by Sid Harcourt. I want to look at this essential ingredients, and at some of the problems they present to some teachers, in the form of the following 'suggestions to a teacher' who might like to try them.

Choose realistic situations that the pupils would like to understand—as far as possible they should be action problems, that is ones that affect decisions they will take in their everyday lives. You may have some good ideas (chance?) but if you ask each child to write down anonymously something they have been concerned about today, you will get a rich store to choose from.

Start the problem-solving group with the whole class, to begin with—and let them play the 'consultant' role, studying the problem—and then offering coherent advice. There are up right answers, though there are wrong ones, and the criterion of success is the quality of the advice and the argument justifying it. The aim is, practical pay-off.

Keep the model and the mathematics simple. At first, the group should be asked to 'play the consultant' role, studying the problem—and then offering coherent advice. There are up right answers, though there are wrong ones, and the criterion of success is the quality of the advice and the argument justifying it. The aim is, practical pay-off.

Encourage them to keep a record of everything they try—ideas, calculations, data collected and so on. When they feel they have done enough, ask for some sort of report of what they have achieved.

I hope that these brief explicit suggestions to a teacher give something of the flavour of tackling real problems in the classroom. It is an activity that children enjoy provided they see the problems as of concern to them.

It can have a motivating effect on more 'conventional' teaching. The child can look for situations which it might describe, such as concrete illustrations also help to establish the mathematical concepts. It is an approach that is relevant to all stages from primary school to university. It is an essential ingredient of learning to use mathematics, even though it often produces the remark, delivered in a complaining tone: 'But surely, Sir, this isn't maths.'

Hugh Burkhardt is Professor of Mathematical Education at Nottingham University. He is an applied mathematician, interested in teaching, and problem solving.

example fluency with graphs or simple algebra can increase the power of analysis enormously but even while students find this hard and it is certainly better to use simple maths effectively than to use labour for sophistication. Many teachers find this hard to accept—delighting in the pupil who calculates the average, pyramiding it, adds nothing to what is already clear from the shape of the histogram, for example.

Follow-up the pupils along their paths through the problem—this self-enforcing ordinance is the hardest to sustain. The temptation to hint at the clearly superior route that one has found, and on which one is confident of providing sound guidance (1), is almost irresistible. However, we are teaching path finding, not a path to a good problem. It is a pity to turn a good problem into a routine exercise in following a path. The aim is, practical pay-off.

Encourage them to keep a record of everything they try—ideas, calculations, data collected and so on. When they feel they have done enough, ask for some sort of report of what they have achieved.

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A.M. Haigh, B.Sc.

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GUIDELINES FOR ORGANIZATION

Ruth Townsend introduces the new Classroom Management Packs devised by the Avon Resources for Learning Development Unit

The Resources for Learning Development Unit was set up in 1974 as a teachers' cooperative in produce material for independent learning. The outcome of the Mathematics Project was a bank of resources for the 11 to 13 age range covering the topics of most syllabuses. The material was characterized by bright appearance, variety of format and a child-centred approach resulting from its authorship by practising teachers. The use in the classroom was, however, left to the teacher.

At the end of the unit's development phase, there was a realization that content must be matched to the management of resources in the classroom used sustained investigation. Teachers planning courses can choose from class activity, group work and independent study, each of which has its own strength and its own problems of management.

At RLDU we have worked with teachers to provide outlines of courses for mixed-ability classes which exploit these strengths and provide the essential variety. At the same time, each editor has devised guidelines for the organization of each type of activity in his or her own subject.

It is on irony that those mathematics teachers whose view of the subject is most skills-based have been those most committed to class teaching. This work at RLDU suggests that this is a serious mismatch of method with objectives. Independent activities provide the best opportunity to cater for the needs of individuals. When pupils are acquiring skills and practising techniques, they need an individual programme through which to progress.

In solving problems and using skills, children, like adults, can learn much from each other, so we provide activities which require small group work where cooperation and communication are encouraged.

Class activity, too, has a place and teachers are encouraged to use it at the most appropriate stage. In all but the most homogeneous grouping, it is unproductive to teach skills by direct class lessons but the teacher can initiate investigation, motivate, and summarize by the use of carefully-timed class activities. The test for relevance being whether every pupil will have an equal opportunity to participate and use language in context.

The emphasis on variety of activity puts the RLDU at variance with many other mathematics projects. Our system relies on the whole class being involved in work on the same topic at the same time. In a vision of a classroom during any of the activity phases immediately recognizes that the topic is being Patterns, say, or Polygons. More important, perhaps, so does the child. He or she will tell the teacher that they are working on that topic rather than "We do work on it". The use of display spaces, television, film, visits or microprocessor work in this situation is much more convincing.

Three classroom management packs have been produced as models of short courses of study (about four weeks) using a variety

of activities. It is hoped that teachers will devise their own using their school's particular objectives and incorporating existing resources as much as possible.

Each pack is designed for first-year secondary mixed-ability groups of 30, but can easily be modified for streamed or setted classes. It consists of:

- resources for independent and group learning;
- a teacher's guide with suggestions for class lessons and extension;
- an analysis of resources and objectives;
- a network of the activities;
- Route cards for the pupils;
- a complete record-keeping system;
- storage boxes.

A handbook *A System of Classroom Management* gives guidance on maximizing the effectiveness of each learning style.

Classroom layout must encourage the use of all activities. The model classroom in Bristol has been organized with this in mind. The "dining room" layout has been discarded in favour of paired tables on the perimeter of the room, giving ease of access to the central resources and sundries. Pupils work in private "cavels" when occupied independently, but small groups can be easily formed by the removal of a simple clipboard partition. In either case the teacher has a position of clear vision. For class activity the central area can be used.

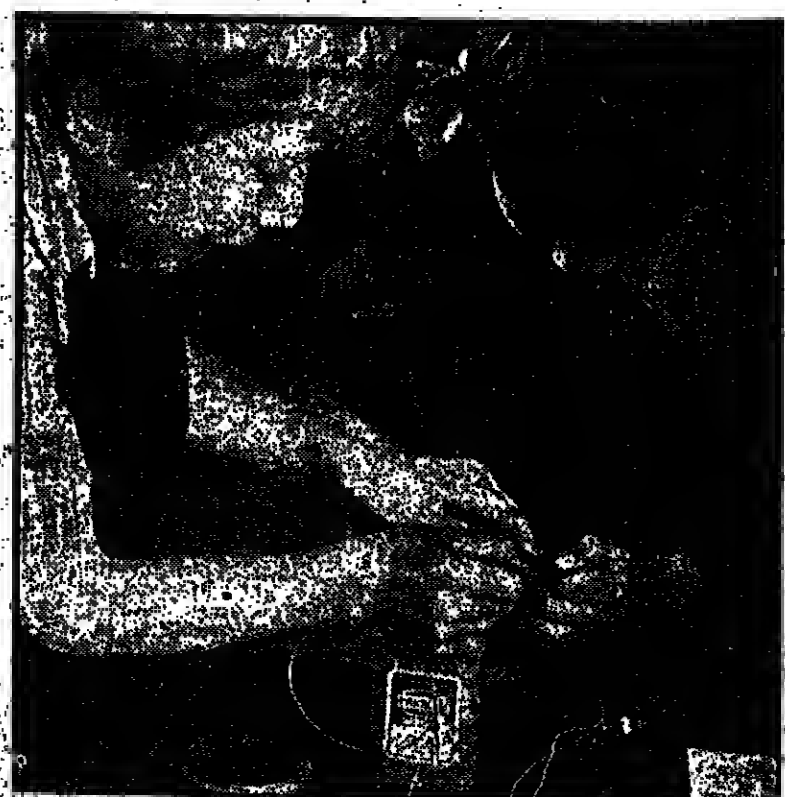
From the management angle, it is the independent learning phase which causes most concern. We advocate a system of classroom organization where the most important feature is the consultation between teacher and pupil when a "contract" is negotiated. This consists of a series of activities, catering for the ability, needs and interests of the individual. Mathematics material has been found to be most effective if short and fulfilling, a few specific objectives. The pupil's contract is likely, therefore, to consist of up to eight individual or group activities. As a form of shorthand, there are route cards which list typical activities for various abilities. The contract might consist of a particular route or an entirely new set of activities.

The model aims to minimize the role of teacher as resource-caller and give maximum time for a personal and calm consultation. It does, however, also take account of the need in mathematics for more frequent teacher-child interaction. There is an emphasis on self-reliance and an embargo on queues. Record-keeping is thorough and linked to the consultation.

Details of the classroom management packs *Number Patterns, Polygons and Statistics* can be obtained from RLDU, Redcross Street, Bristol BS2 0BA—Telephone Bristol 553491.

The *Mathematics Handbook* costs 50p from the same address.

Ruth Townsend is Project Editor, Mathematics of The Avon Resources for Learning Development Unit.



Designing the garden shed alarm bell during the garden project at Portobello Primary School, Walsall.

MATHS MADE DIFFICULT

Towards a theory of taught helplessness. By John Kilburn

In school mathematics many children seem to be "baffled". Some don't understand, many pretend to. Generally incomprehending, highly anxious, they try desperately to rote-learn "the method". Sometimes this works and sometimes it doesn't. Overall, though, the tactic is self-defeating, as more and more disconnected bits of information are learned or lost, so more and more earlier bits are forgotten or confused. The unhappy pupil feels increasingly incompetent, and eventually gives up.

We teachers might be helping this to happen. Certainly some recent work in social psychology suggests that we do. Martin Seligman set up some experiments in which dogs were put into a metal box. Naturally enough, when electricity flowed through the floor the dogs jumped out. However, if they had previously received a number of inescapable shocks they did not jump out. They lay there and took the shock.

Later, less drastic experiments indicated similar human responses. Seligman called this "learned helplessness", a state being in which people learn that no action which they can possibly take will alter certain consequences in their lives.

I recently heard this echoed at a party. A clever, articulate woman was saying that she was a mathematician. I asked her what she did. She said "I help people who can't do it". I asked her what she did. She said "I help people who can't do it". I asked her what she did. She said "I help people who can't do it".

Mathematics makes many pupils anxious. One slip and the sum is wrong (and though we stress that marks are gained for correct working, our "hidden curriculum" usually emphasizes that a right answer is essential). Again, a major area of mathematical activity for young children is called "problems"—a word which in real life carries overtones of stress and difficulty. In his research on anxiety, I.B. Patrick writes about the effect of stress on problem solving and finds that efficiency falls drastically as anxiety rises, until subjects produce "fretful hit-or-miss child-like" behaviours.

Again, mathematics, much more than other subjects, has vocabulary difficulties. Words like "denominator", "interaction" and "modulus" create feelings of aversion, more so perhaps because they are "English" and cannot be said to be intrinsically difficult as foreign languages are.

A different argument applies to the actual teaching of mathematics. With few pupils succeeding at the subject, many who later become teachers are not well qualified. In primary schools, for instance, 50 per cent have not even O level mathematics, but almost all teach the subject. This can have at least two unfortunate consequences. One is understandable enough, but does not help the pupil. That is the reluctance on sticking to a prepared lesson and refusing to go outside it for fear of being unable to explain something new, or answer an un-

prepared point. Thus, G. A. Reed reports that many pupils watch Open University maths programmes and go to school next day with questions their teachers cannot answer.

The other is equally disabling—simply wrong teaching, which, while it may lead to right answers immediately, actually misleads the pupil mathematically. A good example is the statement "when multiplying by ten, add a nought". This works for whole numbers, but obscures the core concept of place value. When it is applied to 7×10 , a severe feeling of helplessness is likely to be experienced as a trusted and taught method suddenly does not work.

I was once given a multiple-choice paper to assess. One question read: "1 + 1 is (a) 1/6, (b) 2/5, (c) 5/6, (d) 3/4". When I suggested that, for pupils, two possible answers were the correct one and thereby actually increased children's chances of mistakes, I received uncomprehending stares. But, to the "desperate memorizer", 1 + 1 might be 1/6 (did not come out), or, somewhere, some time, "multiply the top by the top and the bottom by the bottom" (7) or 2/5 (because 1 + 1 is 2 and 2 + 3 is 5).

There is another dangerous practice concerned with multiple-choice questions. Some teachers say "If time is short and you've lots still to do, guess the remaining answers. If you're lucky some will be right, but if you put nothing you'll get no marks". Superficially, this is good advice—at least in the annual game of "beat the examiner". But it may carry a psychological penalty. C. I. Kleinke suggests that people who believe that the outcomes of their actions are controlled by luck will experience more learned helplessness.

Unfortunately, it is also true that able maths teachers, unless they are sensitive and understanding, may, by their skills, render children

Questions their teachers can't answer...
Unfortunately, it is also true that able maths teachers, unless they are sensitive and understanding, may, by their skills, render children

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WHEN A TRICK IS NOT A TRICK

By Jonathan Smith

Do you remember those slim grey-green volumes, filled with improbable mathematical situations, that used to be the bane of every primary school-child's life? I remember the one I used down to the smallest detail; the torn cover, the ink stains, and the pencilled answers. Considering that I have since taken O and A levels in the subject, and spent some time in higher education studying it, it is an extraordinarily vivid memory.

For some years now I have had nothing to do with the formal study of mathematics; ask me about differential equations or solid geometry, and I may be able to produce a few half-remembered formulae, but the details are all gone. Yet, the words "mental arithmetic" and it is that grey-green book which appears in my mind's eye, accompanied most forcefully by the laughing with which I regarded it, and the words, like some horrible charm, "If it takes 10 men three hours to dig a hole, how long will it take 30 men to dig a hole?" This is a question which that educationist who survives when that has been forgotten. All the advanced formulae have gone, but the little obdurate little book, maybe it is some consolation to

think that those books have long been banished from the school desks, to be replaced by pegboards, tape measures and set theory, but there is a strong suspicion that the problem has not been solved, only indefinitely deferred, that in the child who goes home from school to his Walt Disney calculator, mental arithmetic has become no more comprehensible.

That is not to condemn calculators. There is no doubt that computer technology has its place in today's world, and that many of the problems we set ourselves are, in terms of time and economy, insoluble without their aid. This is simply an extension of man's role as calculator, and no one could expect the engineer with 40 or 50 step calculators to perform in the absence of them.

But having created the tool, we are not in danger of misusing it. One need only see school students using their calculators for elementary work to realize that we have reached the conclusion that the very basis of mathematics are not suited to the human mind—mental arithmetic may become mechanical arithmetic if we do not take care. Considering this attitude to mathematics, which seems to be deeply embedded in many people's minds, it is refreshing to hear of a

man which takes a completely new look at the subject. I was offered this opportunity when I attended the first of a series of lectures on Vedic Mathematics at the University of London Union in March. The lecturer, advertising the series, had promised simple methods of solving complicated problems, and we were not disappointed.

Vedic Mathematics takes a whole new look at the subject, eye in the mind, outrageous shortcuts, often producing the answer in one elegant step. Numbers are manipulated in a way quite foreign to us, and with the application of the right formula or method, lengthy problems will resolve themselves into the answer.

More than this, we were also offered a new concept of number. No longer was there an infinite ladder with numbers stretching into the sky, up and down which one climbs with labour, until one reaches the conclusion that mathematics is best left to those with a good head for heights. In this new concept, numbers are not a ladder but a circle. I have heard mathematicians claim heavily as an aspect of their subject, but I had never seen it before. I still do not understand the pattern, and I know our lecturers would claim to have explored only a small part of it, but it is there.

Vedic Mathematics was discovered, or rediscovered, by B. K. Tirthaji, a noted Indian scholar of the first half of this century, who claimed that it is an ancient system, surviving in the form of 16 sutras or aphorisms. Unfortunately not all of his work has survived. The original 16-volume exposition of it, dealing with all areas of mathematics including arithmetic, algebra, geometry, trigonometry, and many other fields, was lost. We are left with an 11-volume work which he wrote in the year before his 1958 lecture tour of America, when the loss of the complete work had been confirmed. Then in his seventies, he planned to rewrite all 16 volumes, but died before he could complete the task. What remains is a treatise mainly in arithmetic, though the clues in other areas are quite sufficient to whet the appetite.

If what is left is found to work, and it certainly seems to, it will be a very exciting development. Tirthaji discovered simplicity he also discovered ease. There is an assertion implicit in all of his work that mathematics need not hurt; the syntax can unlock the rigid structure that appears to be the westerner's comprehension of the subject, and make it natural to the mind. This, he said, was true mental mathematics, and with that phrase conjured up the spectre of my grey-green mental arithmetic book.

This process of unlocking may be superficial to those who have persisted in Western methods and

achieved the goal of understanding, but for the children, most of whom will give up, it is vital. To begin at the beginning, and go on till you come to the end, then stop? said the White King, and we have been laughing at him for generations while they still have a chance to see it.

For the rest of us there is another chance tonight and two more thereafter as the series of lectures continues. The most important thing is that we take care that our habitual view of mathematics does not obscure what we are being presented with.

Who may write Vedic Mathematics off as a parlor trick if we wish, but that is very tempting when faced with some of the unusual methods. But a trick is only a trick so long as the audience does not know how it is done, and I for one am grateful that Tirthaji found a false bottom to mathematics.

It appears he was not a man to be afraid of upsetting a few ideas. "Is it mathematics or magic?" the professors exclaimed in one of his lectures. "It is both," he replied, "it is magic until you understand it, and it is mathematics thereafter."

Vedic Mathematics: Delhi, Motilal Banarsidass, 1965. The lectures continue tonight, and for the next two Fridays, at the University of London Union, starting at 7 pm.

OLYMPIC MATHS

By Susan Thomas

How do you feel about the question "Play the sum of the digits of the largest even three digit number (in base ten representation) which is not changed when its units and

hundreds digits are interchanged? (Chinese from 22, 23, 24, 25, or 26. Obviously isn't it? Or again: Find the square of all the root numbers satisfying the equation

$354 - 256^2 = 0$. (Chinese from 8, 128, 512, 6536, 12265). Both questions are from the 1979 National Maths Contest paper. They are not exactly party small talk but very entertaining for bright young mathematicians. If you are bogged down trying to teach quadratic equations to the slow end of a mixed ability fourth year, have a spare 10 minutes or just feel jaded, they are a good thing to have on hand.

The National Maths Contest (NMC), staged every March, is a first class challenge to the best of the International Mathematical Olympiad (IMO). It is an entertaining, fast moving, 30 question paper, exciting and stimulating for the pupil and school and sadly ignored by most of us.

In spite of our successes (we have taken second, third or fourth place frequently since 1967) the IMO has had very little publicity and many schools remain wary of it. Last year, when the 21st Olympiad was staged in London, we had a record entry of about 14,000 but this year it is down to the 10,000 mark again.

Why enter anyway? The East Europeans who use it to identify and encourage their outstanding young scientists and mathematicians were from the 1979 National Maths Contest paper. They are not exactly party small talk but very entertaining for bright young mathematicians. If you are bogged down trying to teach quadratic equations to the slow end of a mixed ability fourth year, have a spare 10 minutes or just feel jaded, they are a good thing to have on hand.

The questions set for the later stages of the British Mathematical Olympiad (BMO) and the IMO are formidable, the table is levelled with an opportunity for creative thinking and in the words of Robert Lynes, examiner and chairman of the Olympiad, give "the assurance, denied later when they receive the solutions of knowledge that there is a solution to the problem" and the supreme joy which comes with success after a struggle.

Consider this question from the 1979 IMO: Let n and k be natural numbers such that:

$$1^2 + 2^2 + \dots + n^2 = k^2$$

Prove that n is divisible by 7.

For the talented eight and nine teachers who accompany them in squad 10 days in Belgrade, Brno, Bratislava or Buzsacs (should have staged the Olympiad in Birmingham 21st is the chance of a lifetime, solving problems, discussing the differences in national approaches and generally broadening the horizons.

Continents) and British mathematicians have gone their separate ways since the days of Leibniz and Newton and the IMO papers have to take these differences into consideration. We teach calculus, statistics, mechanics and probability, they do number theory, combinatorics and much more geometry. The papers suit the student who reads around his subject and might recognize with pleasure the pigeonhole principle or the theorems of De Moivre, Cauchy, Ramsey or Wilson. The problems or calculations, are allowed in the context and many of the solutions are expressed with beautiful brevity. Special prizes are given for the most elegant solution and last year every member of our IMO team won a prize.

Where do the young Olympians come from? In 1967 three schools, Eton, Winchester and Manchester Grammar provided the whole team but last year's team was much more widely based. They came from Westminster, The Royal Grammar School, High Wycombe, St Albans, Cusworth, Mouchester Grammar, Dulwich College, Highgate and Keble College, with Bury Grammar and St. Dunstons, Eton, and Down.

Providing the resources to produce exceptional mathematicians? A climate of mathematical enjoyment created by a staff who revel in the subject themselves according to R. W. Payne, the Deputy Master of Dulwich College, which has had more than 10 years of representation, a mathematical climate and the good fortune to have more than one very able youngster at a time.

St Albans School put it down to geography and home background.

They outpace the sons of BAC, ICI and British Aerospace employees in the area, most of whom have a mathematical or engineering interest. There may be something in this because last year they had an amazing 10 pupils qualifying for the BMO. And what about the girls? Girls make up about 10 per cent of those who qualify for the second stage but so far none has managed to reach the team. Generally they seem to be handicapped in competitions by an over-careful approach.

See the Mathematical Gazette or contact the Mathematical Association or the SMP for more information. The International Olympiad 1989/1990 will be held in Moscow.

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PLATE GLASS - The PLATEGLASS Co., Inc., located in New York City, has recently acquired equipment designed by the company's own design engineers for manufacturing plate glass. The new plant will produce flat glass up to 60 ft. wide and 120 ft. long.

The new 22-story plant for automatic flat glass production is situated at 170 West 42nd St. in Manhattan. It features a large hall where all machines of this type are made and installed.

GLOUCESTERSHIRE

WINDMILL CLUBS - In honor of the late Sir Winston Churchill, the Gloucestershire Windmill Club has been organized for September 1944. It is held every month of the year.

F. C. I. P. M. - 11 - 1944

GLOUCESTERSHIRE
DEWICK SCHOOL
 Herts
 Recruited for September 1964
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LANNIOWEN JUNIOR & JONAS
Amford Cereals, 1112 E.
Fourth St., CONSUMERS
St. Louis, Mo. 63101.
Approved and curriculum
with S.A.C. to Head Teacher

HARROW
EDUCATION COMMITTEE
LAWRENCE HILL SCHOOL,
Lanyon Hill, Harrow, Middle
sex, ENGLAND
11-47-73264
Inquiries for September
1974
PARENTS REQUESTING to
CHANGES to "O" level and
REDUCED "O" SCIENCE to
"A" level. (1974) - 1974
School (12-16) of 200 boys
in 6 strong traditional, nation

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HAYERING
(London Borough of
Harrow, 1988) 23/10/88
Arbury Drive, Harrow
TELEPHONE 0181 871 4444
social work
For details see our eighth
volunteer, tutor
social

HAYERING
(London Borough of
Harrow, 1988) 23/10/88
Arbury Drive, Harrow
TELEPHONE 0181 871 4444
social work
For details see our eighth
volunteer, tutor
social

TEACHERS OF PHYSICS, Etc.
For full details see our
advertisement in the Evening
Star.

HAVING
London Borough of
Waltham Forest, 1900.
Worth Elm Road, Waltham St.
Marychurch, Essex.
TEACHING OF PHYSICS and
advertisement under Scientific
series.

**BERFORD AND
WORCESTER
COUNTY COUNCIL**

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BIRMINGHAM
CITY COUNCIL

COUNCIL

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Applicant for loan (to be returned to RT/T), P.O. Box 1, Chelmsley Wood, H.A. 7HW, (extension 881).

Color of Education (Staff/
Field House, 5 Park Lane,
Telephone: 01-603 1460

COLNE PARK
Vancouver, B.C.
SHEILA LALOR
Dunelm, Surrey
B.C.

Colony 5000 (95% mixed)
ALL SAMPLES
(No Practice)

11

1. *Chlorophyll a* and *Chlorophyll b* were determined by the method of Arar and Collins (1971) using a Shimadzu 1010 spectrophotometer. The concentration of chlorophyll was expressed in mg g⁻¹ of dry weight.

This Outer London Borough is situated on the Eastern side of Central London on the edge of the Green Belt. There is easy access to London. Unpleasantly stated:—

Closing date is 14 days after the appearance of this advertisement. In respect of secondary school posts letters of application should be sent to the Head Teacher concerned giving full curriculum vitae and quoting two referees.

For primary schools posts application forms are available from the Director of Educational Services, Mercy House, Mercury Gardens, Romford, Essex.

Applications requiring acknowledgment and requests for further details and application forms should be accompanied by a stamped addressed envelope.

There is a scheme for removal expenses, details on request.

SECONDARY SCHOOLS

Abbe Cross School
(Roll 1,000, Coeducational)
Abbe Cross Lane, Hornchurch, Essex
Telephone Hornchurch 43034
Head Teacher: M. McAlpine, BA

TEACHER OF ENGLISH

Scale 1 required September, 1980, to teach the subject in Years 1 to 6. This is an opportunity for an experienced teacher or new entrant to the profession to work in a well-structured department where the teaching is literature based.

Sedberry Park School
(Roll 1,150, Coeducational)
Appley Grove, Romford RM3 7BJ
Telephone Ingebourne 71331
Head Teacher: R. J. Brecken, BA
(SPA Allowance, £201/2276 per annum, payable)

TEACHER OF SCIENCE

Scale 1 required September, 1980, to teach in Years 1 to 6 (any discipline considered) with ability to teach "O" level/CSE an advantage. Well-equipped laboratories and detailed curriculum planning.

TEACHER OF SCIENCE

Scale 1 required, as soon as possible. Physicist, Physicist Scientist, or Chemist, with versatility, sound teaching skills, and lively interest. Teaching full 11 to 18 age-range available. Excellent facilities and detailed curriculum planning.

Chifford School
(Roll 980, Coeducational)
Lanthe Lane, Rainham, Essex
Telephone Rainham 52811
Head Teacher: M. S. Justins, MA

TEACHER OF MATHEMATICS

Scale 1 required, as soon as possible, to teach SMP Mathematics for any level offered, but preferably to include "A" level work in a well-established department. A temporary appointment would be considered.

TEACHER OF SCIENCE

Scale 1 required September, 1980, to join an expanding department, to teach Combined Science in the first two years and a specific science to higher years. Opportunity exists to become involved in organizing field work.

Chase Cross School
(Roll 1,250, Coeducational)
Havering Road North, Romford RM1 4VY
Telephone Romford 47353
Head Teacher: D. A. Steward, BA

TEACHER OF PHYSICS

Scale 1 required, as soon as possible, to assist with the teaching of the subject throughout the school. There is also an opportunity to teach Combined Science in the Lower School. Well-established courses to CSE, "O" and "A" levels.

TEACHER OF DOMESTIC SCIENCE

Scale 1 required September, 1980.
Teaching of some Needlework would be involved.

Emerson Park School
(Roll 1,000, Coeducational)
Wyke Elm Road, Wingleford, Essex
Telephone Hornchurch 43773
Head Teacher: J. A. Fowler, MA

TEACHER OF PHYSICS

Scale 1 or 2 required, as soon as possible, to teach GCE "A" level as well as "O" level and CSE work. There will also be Physics or Combined Science teaching in the Third Form. Strong, well-equipped department, well-established courses. Applications are invited from experienced teachers or new entrants to the profession. Scale 2 post available for a suitably qualified and experienced candidate.

TEACHER OF FRENCH

Scale 1 required September, 1980, to share the teaching of CSE and GCE "O" level in the first instance, with the possibility of "A" level work in the future. Lively and progressive department where language laboratory and audio-visual aids are widely used. French is taught to majority of pupils and is popular in the Sixth Form. Applications are invited from established teachers or from new entrants to the profession.

Forest Lodge School
(Roll 1,421, Coeducational)
Lodge Lane, Collier Row, Romford RM5 2LD
Telephone Romford 48412
Head Teacher: K. D. Smees, BA

TEACHER OF TECHNICAL STUDIES

Scale 1 or 2 required September, 1980, to join a strong Design and Technology Department in its own workshop areas. Candidates should indicate their main interests. Scale 2 post is available for a suitably experienced and qualified applicant. Examination work is taught.

TEACHER OF COMMERCE

Scale 1 required September, 1980, to join a thriving Social and Business Studies Department, and teach one or more of Shorthand, Office Practice, and Typewriting. Courses in the Upper School, including the Sixth Form, are very popular. A suitably qualified and enthusiastic teacher could gain rapid promotion.

TEACHER OF FRENCH AND GERMAN

Scale 1 required September, 1980, to join a thriving Modern Languages Department in its own suite. The "Eiar" course has recently been introduced. The Department has an active scheme of foreign visits and exchanges and offers "A" level courses in both languages.

TEACHER OF MATHEMATICS

Scale 2 required September, 1980. A suitably qualified and experienced teacher is required to join a large, able Maths Department located in its own area of the school. The Department has a modern outlook with its own Mode 3 CBE course and is to expand its Computer Studies courses. Candidates should indicate the contribution they feel they could make to the Department. This could include "A" level teaching.

Harrow Lodge School
(Roll 750, Boys)
Hyland Way, Hornchurch, Essex
Telephone Hornchurch 57041
Head Teacher: W. S. Youll Richards, BA

TEACHER OF SCIENCE

Scale 1 required, as soon as possible. Ability to teach Physics to "A" level an advantage. The school is split into three specialist laboratories on the Upper School site and two general laboratories on the Lower School site. The subjects are taught to CSE, "O" and "A" levels.

TEACHER OF MATHEMATICS

Scale 1 required, as soon as possible.

TEACHER OF FRENCH

Scale 1 required September, 1980. The Department teaches to GCE "O" level and CSE, and from September will probably have established an "A" level course. The post is suitable for a first appointment.

TEACHER OF TECHNICAL DRAWING

Scale 1 required September, 1980, to teach the subject in Years 1 to 5, including CSE and GCE involvements.

TEACHER OF MATHEMATICS

Scale 1 required September, 1980, initially for work up to GCE "O" level, with responsibility for Boys' review. Educational Computer Facilities available.

Sacred Heart of Mary Girls' School
(Roll 524)
St Mary's Lane, Upminster, Essex
Telephone Upminster 22880
Head Teacher: Sister St Esprit, MA

HEAD OF BUSINESS STUDIES

Scale 3 required September, 1980, to organize, develop and assist in the teaching of Commercial Subjects from Fourth Year to Sixth Form. A variety of courses already established. BEC Course commencing in September.

TEACHER OF HOME ECONOMICS

Scale 1 required September, 1980. Established course to CSE, "O" and "A" level. Opportunity for sharing examination work.

Sanders Orpser School
(Roll 987, Coeducational)
Suttons Lane, Hornchurch, Essex
Telephone Hornchurch 43088
Head Teacher: G. Rogers, BSc

TEACHER OF ART AND CRAFT

Scale 1 required September, 1980, with special interest in Graphics and Printmaking. Art is taught to "A" level, "O" level and CSE.

TEACHER OF BOYS P.E.

Scale 1 required September, 1980, to share in work at all levels throughout the school. There are excellent facilities including a gymnasium, sports hall and large field.

TEACHER OF MATHEMATICS

Scale 1 required September, 1980, with ability to teach a branch of the subject to "A" level essential. In Department with over 70 "A" level students. Interest in Computer Science could be an advantage. Participation in out-of-school activities desirable.

TEACHER OF ART

Scale 1 required September, 1980, with ability to teach to "A" level. Lively, experienced department with much examination work. Wide-ranging subject interest will help but state any specialisms in application. State any second subject. Enthusiasm and a willingness to participate in out-of-school activities essential. Suitable for first post or more experienced applicants.

TEACHER OF ART

Scale 1 required September, 1980, with ability to teach to "A" level. Lively, experienced department with much examination work. Wide-ranging subject interest will help but state any specialisms in application. State any second subject. Enthusiasm and a willingness to participate in out-of-school activities essential. Suitable for first post or more experienced applicants.

PRIMARY SCHOOLS

Engayne Junior School
(Estimated roll 1980/81: 447)
Seyn Drive, Cranham, Upminster, Essex

DEPUTY HEADTEACHER

required September, 1980, for this Group 5 Junior School. For further details please see our advert under Primary Deputy Headships. Closing date May 18, 1980.

JUNIOR CLASS TEACHER

Scale 2 required September, 1980, to take responsibility for Boys' Physical Education and Games. Please state additional subject and extra-curricular interest.

La Sallette RC JM and T School
(Roll 203)
Dovars Corner, New Road, Rainham, Essex
Telephone: Rainham 55553
Head Teacher: Mrs M.C. Harding
An experienced

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SECONDARY SCHOOLS

HARTFORDSHIRE
COUNTY COUNCIL
STATIONERY DEPARTMENT
HARTFORDSHIRE
(Roll 1,000, Coeducational)
Hartford Road, Hatfield, Herts
Telephone Hatfield 51111
Head Teacher: Mr J. H. H. H. H.

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STATIONERY DEPARTMENT
HARTFORDSHIRE
(Roll 1,000, Coeducational)
Hartford Road, Hatfield, Herts
Telephone Hatfield 51111
Head Teacher: Mr J. H. H. H. H.

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FRANCE

BRITISH SECTION, LYCEE INTERNATIONAL,
ST. GERMAIN EN LAYE, PARIS

The section, one of eight in this unique French State School, of high academic reputation, aims to maintain and develop the English in local British children and of children returning from abroad. Classes lead to the Level and the International Baccalaureate. St. Germain is in the residential western suburbs of Paris.

Required for September, 1980:

ENGLISH TEACHER

Experienced Graduate Teacher of English (possibly responsible for Drama), with working knowledge of French (Scale 2 or 3 according to experience). Contract will be for an initial period of two years, renewable. Salary: equivalent to Barnham Scale, plus 20 per cent cost of living allowance, rent allowance, removal expenses, including end of contract, home leave and maintenance of British superannuation. Short-listed candidates will be interviewed in St. Germain.

Apply by letter, curriculum vitae, names and telephone numbers of at least two referees, as soon as possible to: The Headmaster, British Section, Lycee International, B.P. 128, 78161 St. Germain en Laye. Further details will be sent to all applicants.

ENGLISH

LANGUAGE TEACHERS

TRIPOLI

International Language Centres Ltd. will have several vacancies for teachers in their school in Tripoli Libya, from late August, 1980.

Candidates should hold a degree or Cert. Ed. and applications are invited from both male and female teachers. Contracts are for a minimum of one year. The basic salaries are £2,820.00 Libyan Dinars per annum with increments according to qualifications and experience. Free accommodation, return air fares, relocation allowance, terminal gratuity, and six weeks' holiday per year.

For details and application form apply to:

Personal Department (Libya)
International Language Centres Ltd.
24 Old Broad Street, London, W1
Tel: 01-404 9487

ENGLISH

LANGUAGE TEACHERS

KUWAIT

International Language Centres Ltd. invite applications from English Teachers, preferably with a minimum of two years' experience in TEFL, to join an already established language training team. Candidates should be male, of bachelor status and should hold a degree or Cert. Ed.

Contracts are for a period of one year from mid-August. The basic salary, which is tax-free in Kuwait, is £3,780.00 Kuwaiti Dinars per annum with increments for qualifications and experience. Return air fares, relocation allowance, housing and daily transportation to the teaching site are provided free. Paid holidays are six weeks per year, in addition to Kuwaiti Public Holidays.

For details and application form apply to:

Personal Department (Kuwait)
International Language Centres Ltd.
24 Old Broad Street, London, W1
Tel: 01-404 9487

KUWAIT

THE ENGLISH SCHOOL—FAHAHEEL
An independent Primary School for
mainly British children

MUSIC TEACHER

Required for September, 1980

Adaptable single female teacher of British nationality, aged 25-35 years, capable of teaching MUSIC to all classes from four to 11 years, with ability to organise Percussion work, train Choir, prepare children for Competitions, etc. Primary teacher with piano to Grade 8 may be suitable. Four years' recent experience essential. Applicants must hold valid British Driving Licence. TERMS: Minimum salary, commensurate with experience, Kuwaiti Dinars 2,976.000 liras per annum (current exchange rate K.D. 1.000 liras = £1.82). No income tax here. Free shared accommodation with free utilities, free medical cover and insurance. Generous 'sitting-in' allowances: local, leave, and long summer vacation. Return air passage upon efficient completion of one-year contract, which could be renewable.

Detailed letters of application, stating qualifications, experience, and specific interests, with copies of all test certificates held, names of two referees and passport photographs to: The Headmistress, THE ENGLISH SCHOOL—FAHAHEEL, P.O. Box 7208, FAHAHEEL, KUWAIT, ARABIAN GULF by 28th May.

YOUTH AND
COMMUNITY SERVICE

LONDON

INNER LONDON EDUCATION

ADULT EDUCATION

THREE LEARNER YOUTH CLUB

P.A. 1

Three LEARNER YOUTH CLUBS are required for the new LEARNER YOUTH CLUBS in the inner London area. The clubs will be responsible for the provision of a wide range of activities for young people aged 15 to 19, including social, cultural, and sporting activities. The clubs will be required to provide a safe and secure environment for young people, and to provide a range of activities which will help them to develop their self-esteem and confidence. The clubs will be required to provide a range of activities which will help them to develop their self-esteem and confidence. The clubs will be required to provide a range of activities which will help them to develop their self-esteem and confidence.

LONDON

INNER LONDON EDUCATION

ADULT EDUCATION

THREE LEARNER YOUTH CLUB

P.A. 1

TEMPORARY YOUTH EDUCATION

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STATES OF JERSEY
EDUCATION COMMITTEE

YOUTH SERVICE

EDUCATION COMMITTEE

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YOUTH SERVICE

Ministry of Education

Vacancies

TEACHERS

There will be vacancies with effect from May and September, 1980, for teachers in schools controlled by the Zimbabwe Ministry of Education. Enquiries are invited particularly from male primary school teachers and certificated graduates with high school experience.

Application forms and details of the attractive conditions of service may be obtained by writing to:

The Secretary for Education
P.O. Box 8022
Causeway
Salisbury
Zimbabwe

Education Service

SANDY YOUTH CLUB

DEPUTY YOUTH
WORKER

At this well-established Club which meets in purpose-built premises on the campus of Sandy Place School.

The post offers excellent experience to a suitably qualified candidate within a progressive and expanding Youth Service which offers In-Service Training and regular support sessions. Assistance will be given towards approved removal expenses, legal and estate agent's fees, plus lodging allowances.

Salary within the J.N.C. Scale 1 for Qualified Youth Workers, £3,747 to £4,731.

Application forms and full details may be obtained from the Chief Education Officer, County Hall, Cuddeswell Street, Bedford MK42 8AP, to whom completed forms should be returned as soon as possible.

Closing date: 22nd May, 1980.

Bedfordshire
COUNTY COUNCIL

Senior Lecturer in Hotel
and Catering Administration

Upto £8,570 p.a. + 25% gratuity on total salary

- Maximum tax 15%
- Medical benefits
- Dental benefits
- Free passages

Applications are invited for appointment as Senior Lecturer in the Department of Hotel-keeping and Catering, in a technical institute of the Education Department. The successful candidate will act as a Deputy Head of Department and, apart from assisting in the organisation and development of courses, will lecture on hotel-keeping, food, catering, bar work, and related subjects to post-secondary students.

Applicants must have (a) an appropriate technical qualification (e.g. membership of the Hotel Catering and Institutional Management Association (UK)) and (b) 5 years' relevant post-qualification experience, OR (c) an appropriate British degree (e.g. in Hotel Catering and Institutional Management) and 3 years' relevant post-qualification experience. Preference will be given to those who can speak both Cantonese and English.

Appointment will be for only one agreement of 2 years. The salary scale is from HK\$6,350 to HK\$8,000 per annum (approximately £6,800 to £8,570 p.a.). Starting salary will depend on experience.

For further information and application form, write to: The Hong Kong Government Office of Education, Room 1001, 10/F, 100, Queen's Road Central, Hong Kong.

- Generous terminal leave
- Subsidised accommodation
- Children's education allowances
- Holiday visits for children

teaching experience, OR (c) an appropriate British degree (e.g. in Hotel Catering and Institutional Management) and 3 years' relevant post-qualification experience. Preference will be given to those who can speak both Cantonese and English.

Appointment will be for only one agreement of 2 years. The salary scale is from HK\$6,350 to HK\$8,000 per annum (approximately £6,800 to £8,570 p.a.). Starting salary will depend on experience.

For further information and application form, write to: The Hong Kong Government Office of Education, Room 1001, 10/F, 100, Queen's Road Central, Hong Kong.

Hong Kong Government

OVERSEAS
Appointments

Continued

ARGENTINA

ST. JEROME'S COLLEGE

Buenos Aires

English Teacher

Vacancies

Continued

ARGENTINA

ST. JEROME'S COLLEGE

Buenos Aires

English Teacher

Vacancies

Continued

ARGENTINA

ST. JEROME'S COLLEGE

Buenos Aires

English Teacher

Vacancies

Continued

ARGENTINA

ST. JEROME'S COLLEGE

Buenos Aires

English Teacher

Vacancies

Continued

ARGENTINA

ST. JEROME'S COLLEGE

Buenos Aires

English Teacher

Vacancies

Continued

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English Teacher

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Continued

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ST. JEROME'S COLLEGE

Buenos Aires

English Teacher

Vacancies

Continued

ARGENTINA

ST. JEROME'S COLLEGE

Metropolitan Borough of

WIRRAL

ADVISER

£9,012-£9,810

Responsibility for modern languages or craft design and technology. Should have considerable teaching experience and preferably some experience in advisory work for teacher education.

Application forms from Director of Education, Municipal Offices, Cleveland Street, Birkenhead, Merseyside (051-647 7000, ext 606), returnable as soon as possible.

SENIOR TEACHING STAFF OFFICER

802, £7,677-£8,112 p.a. inclusive

The successful applicant will head the section dealing with all administrative procedures related to the employment of the Authority's teaching staff in schools and further education. Duties include the preparation of annual estimates for teaching staff salaries and administrative support for the in-service training programme. Applicants should have full knowledge and experience of the Birmingham Reports together with a good understanding of current employment legislation. Salary benefits may include legal fees for house purchase (max. £2000), 75% removal expenses and lodging allowance. Flexitime worked.

Application forms and further particulars available from the Personnel Officer, Civic Centre, Uxbridge U88 1UW, telephone Uxbridge 60598, quoting reference E/26/8X. Closing date 23.5.80.

LONDON BOROUGH OF

WILLINGDON

EAST MIDLANDS REGIONAL EXAMINATIONS BOARD

THE WEST MIDLANDS EXAMINATIONS BOARD

These two O.S.E. Boards wish to appoint a

JOINT TECHNICAL AND RESEARCH OFFICER

by 1st September 1980 or as soon thereafter as possible.

The post-holder will be based either in Nottingham or Birmingham. It will primarily be responsible for operational research into the functioning of the Board's examinations. The post will offer a considerable scope to a person with a degree in Mathematics or Statistics, aged about 35 or over, who has held a responsible job and preferably can bring to the work a wide range of technical and statistical skills as applied in the sphere of public examinations.

Salary is negotiable and for a suitable person would probably be in the range of £7,200-£8,500.

Persons interested should write in the first instance without delay, giving brief details of age, qualifications, experience and background.

Dr. O. Fink, Secretary, The West Midlands Examinations Board, Barok House, Spallbrook, Gussersay, Birmingham B5 4NU.

Education Committee

INSPECTOR FOR PRIMARY EDUCATION

(Soulbury Head Teacher, Group 10)

Applications are invited for this senior advisory post vacant from September 1, 1980 due to retirement. Candidates must be well qualified academically and have substantial experience of primary school headship. Advisory or similar experience desirable.

Further details and forms (a.e.) from Director of Educational Services (JB) Mercury House, Mercury Gardens, Romford RM1 3DU. Closing date 14 days after the appearance of this advertisement.

Havering

Racial Equality in Education

Candee Committee for Community Relations invites Applications for the post of

EDUCATION OFFICER

to concentrate on educational needs of primary and secondary school children of ethnic minority groups. Candidates should have experience of teaching in a multi-racial classroom, understanding of ethnic minority educational disadvantage, ability to work with teachers in developing good multi-cultural curriculum practice, experience of the way education authorities work. Officer will have to work with schools, with ethnic minority communities and with ILEA and other agencies, in partnership with CCR's FE Officer. Initiative, administrative competence, imagination important. Commitment to working for racial equality as a member of a multi-racial staff team essential.

Salary: AP4/5 (£5,994 to £7,107, including London Weighting allowance).

Further information (and application form, to be returned by 30 May 1980) obtainable from: Candee Committee for Community Relations, 1 Robert Street, London NW1 3JU (388, 1942/3).

Somerset

EDUCATION

AREA CAREERS OFFICE, BRIDGWATER

CAREERS OFFICER required

Grade AP5, salary £5,973 to £8,381 per annum

The successful candidate will undertake a full range of Careers Officers' duties in the Bridgewater area.

Candidates should have had appropriate careers training, be suitably qualified, and preferably have Careers Officer experience. Applications will, however, be welcome from students who will complete their careers qualification course during 1980.

Application forms and further details available from the Chief Education Officer, Staffing NT Section, County Hall, Taunton, Somerset. Closing date May 23, 1980.

Lancashire

County Council

CAREERS SERVICE

TRAINEE CAREERS OFFICERS

The Lancashire Careers Service has vacancies for two Trainee Careers Officers to be seconded to a one-year full-time course of training for the Careers Service in September, 1980.

Applicants for these posts should be graduates or possess equivalent qualifications and will be expected to remain with the Lancashire Careers Service for two years after completion of their courses. The minimum starting salary for a graduate is £3,408 per annum.

Further details and application forms may be obtained from the Chief Education Officer, P.O. Box 81, County Hall, Preston, PR1 8RJ, quoting reference A737/10/JM. Completed application forms should be returned not later than 19th May, 1980.

ADMINISTRATIVE OFFICER

up to £8,550

To work with BEO/TEO Committees for Mathematics and assist with establishment of a statistical monitoring service for TEG.

Experience in teaching Mathematics or in Educational Administration, and a degree in Mathematics, or related subject, required.

Salary will be according to experience and qualifications.

Application forms to be returned by May 19, 1980, may be obtained, with further details, from Keith Jackson, Personnel Officer, City and Guilds of London Institute, 48 Abchurch Lane, London EC4A 3DF. Telephone 01-279 2493.

Technician Education Council

THE RICHMOND FELLOWSHIP

ASSISTANT DIRECTOR FOR RESIDENT SERVICES

This National Charity, which operates Therapeutic Communities throughout Britain, seeks a Head of Resident Services (London-based) to be responsible for the operation of the Houses and for the work of the Supervisors, Wardens and Staff working in the Houses. The successful candidate will need to be able to maintain high professional standards throughout, and so have administrative, experience at senior management level. A sound understanding of Social Work Practice and Human Relations is needed. The task is very demanding and calls for a person with exceptional management ability, professional competence and stamina. Salary is by negotiation and is based on qualifications and previous experience.

Application forms and Job Description can be obtained from: Stewart Cusack, The Richmond Fellowship, 9 Adair Road, London W14 8PL (or telephone 01-893 8373). A recorded message can be left outside office hours). N.B.—This post is being re-advertised and candidates who responded to the first advertisement need not re-apply.

PROJECT DIRECTOR

Personal Social Services Council—A Future for Intermediate Treatment 1977, recommends the need for an intensive intermediate treatment programme as a direct alternative to custody.

It has taken almost two years of hard and careful negotiations to establish this new experimental project in Lancashire. We are looking for an experienced intermediate treatment worker who has the management skills and creative flair to be able to establish the first UK intensive, intermediate treatment project as recommended by the PSSC in 1977. The project will have an annual budget in excess of £100,000 per year and will be funded jointly by The Save the Children Fund, the DHSS and Lancashire Social Services. The project is part of a large intermediate treatment development within Save the Children Fund and will form part of a major research programme being supervised by Dr Norman Tull from Lancaster University. This is an opportunity to provide the necessary research data that will show that intermediate treatment can be used in many cases as an alternative to custody care.

For further information and application form contact: Mike Whittam, Deputy Director of Child Care, Save the Children Fund, 157 Clapham Road, London SW9 0PT. Telephone: 91-882 1414. Salary will be on the scale G02. Closing date for applications 23rd May, 1980.

Save the Children

Education Department

SENIOR CAREERS OFFICER (FE/HE)

A qualified, experienced Officer is required to take over the running of a well-developed service, concerned primarily with the Borough's Colleges of Technology and Further Education. Applicants should, preferably, have had industrial or commercial experience as well as experience of advisory work across both age and ability ranges.

Salary £6,383 to £7,487, starting point based on qualifications and experience.

Further information and application forms obtainable from the Director of Education, Education Department, Broadway, Stratford, London E15 4BH. Closing date May 23, 1980.

LONDON BOROUGH OF NEWHAM

OVERSEAS Appointments continued

CHESTER

UNIVERSITY OF CHESTER, CHESTER, CHESHIRE. Applications are invited for the post of Lecturer in the Department of Education. The successful candidate will be responsible for the delivery of the first year of the B.Ed. programme. The post is full-time and involves teaching and supervision of students. The salary is £6,383 to £7,487 per annum. Applications should be sent to the Director of Education, University of Chester, Chester, CH1 2JL. Closing date 23 May 1980.

SUNDERLAND

UNIVERSITY OF SUNDERLAND, SUNDERLAND, DURHAM. Applications are invited for the post of Lecturer in the Department of Education. The successful candidate will be responsible for the delivery of the first year of the B.Ed. programme. The post is full-time and involves teaching and supervision of students. The salary is £6,383 to £7,487 per annum. Applications should be sent to the Director of Education, University of Sunderland, Sunderland, SR1 2JD. Closing date 23 May 1980.

WILMINGTON

UNIVERSITY OF WILMINGTON, WILMINGTON, SUSSEX. Applications are invited for the post of Lecturer in the Department of Education. The successful candidate will be responsible for the delivery of the first year of the B.Ed. programme. The post is full-time and involves teaching and supervision of students. The salary is £6,383 to £7,487 per annum. Applications should be sent to the Director of Education, University of Wilmington, Wilmington, BN1 1AB. Closing date 23 May 1980.

Administration

Local Education Authority

DERBYSHIRE

DERBYSHIRE COUNTY COUNCIL, DERBY. Applications are invited for the post of Administration Officer. The successful candidate will be responsible for the day-to-day running of the Council's administrative services. The post is full-time and involves a wide range of administrative duties. The salary is £5,994 to £7,107 per annum. Applications should be sent to the Director of Education, Derbyshire County Council, Derby, DE1 1AA. Closing date 23 May 1980.

GLoucestershire

GLoucestershire COUNTY COUNCIL, GLoucester. Applications are invited for the post of Administration Officer. The successful candidate will be responsible for the day-to-day running of the Council's administrative services. The post is full-time and involves a wide range of administrative duties. The salary is £5,994 to £7,107 per annum. Applications should be sent to the Director of Education, Gloucestershire County Council, Gloucester, GL1 2EJ. Closing date 23 May 1980.

BUCKINGHAMSHIRE

COUNCIL

CAREERS OFFICER

Applications are invited for the post of Careers Officer. The successful candidate will be responsible for the day-to-day running of the Council's careers service. The post is full-time and involves a wide range of careers duties. The salary is £5,994 to £7,107 per annum. Applications should be sent to the Director of Education, Buckinghamshire County Council, Aylesbury, HP8 4JL. Closing date 23 May 1980.

CITY OF SHEFFIELD

PSYCHOLOGICAL SERVICE

EDUCATIONAL PSYCHOLOGIST

£5,870 to £9,282

plus comparability award (qualified applicants under age 35 commence at £7,488)

A fully trained educational psychologist is required as soon as possible.

An interest in working both in schools and in the community is desirable with ability to develop cooperative working relationships with teachers, social and community workers and parents, as well as with educational administrators and advisory staff.

Application forms and further information from the Director of Education, City of Sheffield, Sheffield, S10 2PJ. Closing date 23 May 1980.

NEWCASTLE UPON TYNE

EDUCATION DEPARTMENT

SENIOR CAREERS OFFICER

Applications are invited for the post of Senior Careers Officer. The successful candidate will be responsible for the day-to-day running of the Department's careers service. The post is full-time and involves a wide range of careers duties. The salary is £5,994 to £7,107 per annum. Applications should be sent to the Director of Education, Newcastle upon Tyne, Newcastle upon Tyne, NE1 1AB. Closing date 23 May 1980.

CORNWALL

Education Department

DISTRICT CAREERS OFFICERS

£5,268-£6,381 p.a.

A vacancy exists in each of the North Cornwall and Central Districts of Cornwall, based at Bodmin and Liskeard respectively, for a District Careers Officer. Preference will be given to applicants who are appropriately qualified and experienced in the Careers Service.

Application forms and further details for these posts may be obtained on request of a stamped addressed envelope from the Director of Education, Cornwall Council, Truro, Cornwall, TR1 3BA. Closing date for applications is the 23rd May 1980.

WILTSHIRE

WILTSHIRE COUNTY COUNCIL

EDUCATION OFFICER

Applications are invited for the post of Education Officer. The successful candidate will be responsible for the day-to-day running of the Council's education services. The post is full-time and involves a wide range of education duties. The salary is £5,994 to £7,107 per annum. Applications should be sent to the Director of Education, Wiltshire County Council, Wiltshire, Wiltshire, Wiltshire. Closing date 23 May 1980.

General

BATH

UNIVERSITY OF BATH, BATH, AVON. Applications are invited for the post of Lecturer in the Department of Education. The successful candidate will be responsible for the delivery of the first year of the B.Ed. programme. The post is full-time and involves teaching and supervision of students. The salary is £6,383 to £7,487 per annum. Applications should be sent to the Director of Education, University of Bath, Bath, BA1 2JL. Closing date 23 May 1980.

GLoucestershire

COUNCIL

CAREERS OFFICER

Applications are invited for the post of Careers Officer. The successful candidate will be responsible for the day-to-day running of the Council's careers service. The post is full-time and involves a wide range of careers duties. The salary is £5,994 to £7,107 per annum. Applications should be sent to the Director of Education, Gloucestershire County Council, Gloucester, GL1 2EJ. Closing date 23 May 1980.

LONDON

EXAMINERS

PSYCHOLOGICAL SERVICE

EDUCATIONAL PSYCHOLOGIST

£5,870 to £9,282

plus comparability award (qualified applicants under age 35 commence at £7,488)

A fully trained educational psychologist is required as soon as possible.

An interest in working both in schools and in the community is desirable with ability to develop cooperative working relationships with teachers, social and community workers and parents, as well as with educational administrators and advisory staff.

Application forms and further information from the Director of Education, City of Sheffield, Sheffield, S10 2PJ. Closing date 23 May 1980.

NEWCASTLE UPON TYNE

EDUCATION DEPARTMENT

SENIOR CAREERS OFFICER

Applications are invited for the post of Senior Careers Officer. The successful candidate will be responsible for the day-to-day running of the Department's careers service. The post is full-time and involves a wide range of careers duties. The salary is £5,994 to £7,107 per annum. Applications should be sent to the Director of Education, Newcastle upon Tyne, Newcastle upon Tyne, NE1 1AB. Closing date 23 May 1980.

CORNWALL

Education Department

DISTRICT CAREERS OFFICERS

£5,268-£6,381 p.a.

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Application forms and further details for these posts may be obtained on request of a stamped addressed envelope from the Director of Education, Cornwall Council, Truro, Cornwall, TR1 3BA. Closing date for applications is the 23rd May 1980.

GLoucestershire

COUNCIL

CAREERS OFFICER

Applications are invited for the post of Careers Officer. The successful candidate will be responsible for the day-to-day running of the Council's careers service. The post is full-time and involves a wide range of careers duties. The salary is £5,994 to £7,107 per annum. Applications should be sent to the Director of Education, Gloucestershire County Council, Gloucester, GL1 2EJ. Closing date 23 May 1980.

HERTFORDSHIRE COUNTY COUNCIL

EDUCATION COMMITTEE

PRINCIPAL EDUCATIONAL PSYCHOLOGIST

Soulbury Head Teacher's Scale: Group 10, plus £177 bting allowance.

Applications are invited from suitably qualified and experienced Educational Psychologists for the post of Principal Educational Psychologist, who is responsible for the School Psychological Service and is a member of the Authority's Advisory team.

Apply by letter giving names of two referees to County Education Officer (H41 AFS/891), County Hall, Hertford SG13 8DF, from whom further details may be obtained. Closing date 31st May, 1980.

Psychological and Child Guidance Services

CHIEF PSYCHOLOGIST

Soulbury Scale Head Teachers Group 11 (£10,491-£11,891, under review)

Joint Psychological and Child Guidance Service

Applications are invited for this post, at the head of a large multi-disciplinary service. In addition to referral-based work the Service operates a variety of in-services training, advisory and systems-based approaches. The Chief Psychologist has a major advisory role within both the Education and Social Services Departments, as well as managing the Joint Psychological and Child Guidance Service.

This post offers great professional satisfaction to fully qualified educational psychologists of high calibre, with proven professional and managerial capability and visionary capacity. It is expected that interviews will be held on 20th and 24th June, 1980.

Informal enquiries may be addressed to the present Chief Psychologist, Dr. G. W. Herbert, at the George Road Child Guidance Centre (021-454 1166/79).

Candidates, male/female, may obtain applications forms (returnable by Friday, 30th May, 1980) and further particulars from: The Chief Education Officer, Educational Services Department, Margaret Street, Birmingham B3 3BU. Telephone 021-235 2857.

Canvassing will disqualify.

BIRMINGHAM

CITY COUNCIL

SOCIAL SERVICES DEPARTMENT

SOCIAL WORKERS (INTERMEDIATE TREATMENT)

Deilyn and Alvin & Dorelle

Salary Scale Level 3 paid following two years' post-qualification experience. Level 2 paid following six months' post-qualification experience.

These are new posts offering the opportunity to adopt a positive approach to rehabilitative social work with children. The posts are part of a new initiative to develop a limited number of Social Workers in the Intermediate Treatment Service. The posts are located in the North West London area, near the North West London Hospital, and are part of a new initiative to develop a limited number of Social Workers in the Intermediate Treatment Service. The posts are located in the North West London area, near the North West London Hospital, and are part of a new initiative to develop a limited number of Social Workers in the Intermediate Treatment Service.

Further details and application forms may be obtained from the Director of Social Services, Social Services Department, Birmingham City Council, Birmingham, B3 3BU. Closing date 23 May 1980.

